

# GULLWING

*Magazine*

Fall 2004  
Volume 2 Issue 4



***TURBO TIPS  
MONSTER MASH  
WHEEL ADAPTERS  
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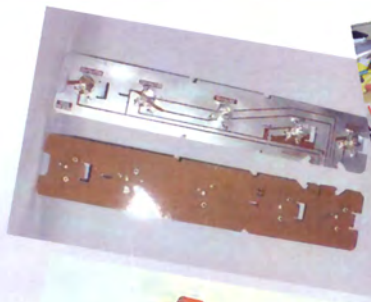
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Graphic Art by: Erica Wester

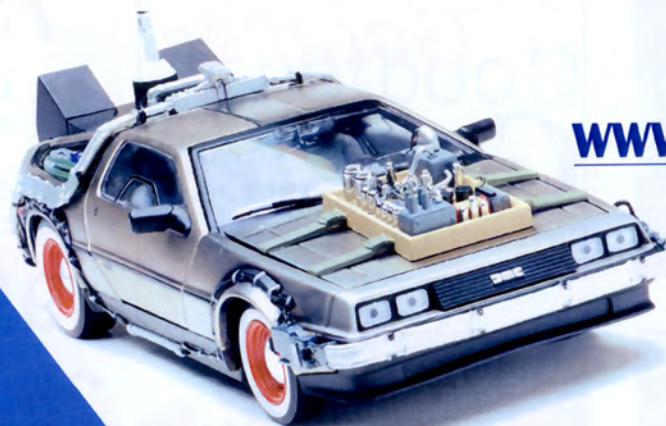


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Printed in USA



*Ron Wester*

FROM THE PUBLISHER'S DESK

**T**his issue has many interesting articles that will be of great use to many of you.

For those of you with turbos that have been looking for the answer to your fuel supply issues, Joe Kuchan has come up with a neat little setup to get the most boost for the buck.

If you have ever thought about recovering your seats but wanted to see someone else do it... David Jacobs has given us step-by-step instructions with pics to make the project less intimidating.

Did you ever want a "D" trailer? We give you the scoop on what it took to build ours. It's a costly toy, but it has been a lot of fun.

Again in this issue, we have received the support of almost all of the vendors. We really do appreciate that. And just as important, the input and writing from owners/enthusiasts has been awesome. By having articles written by DeLorean owners, we are truly getting to cover the type of stories that people would like to see.

Good luck with all your winter-time DeLorean projects. If you have a question that you can't seem to get the answer to, drop us an email. We have met lots of knowledgeable "D" owners, and we can probably get you an answer.

I hope everyone has a joyous holiday season and a safe and prosperous New Year.



*Cheryl Wester*

FROM THE EDITOR'S DESK

**I**f you haven't noticed, the project that Ron promised to include in this issue is on the front cover! It's quite an interesting and eye-catching little innovation—at least that's what I've observed from people that notice it and take a closer look. I guess I don't see what all the excitement is about... I just see an expensive "toy" that looks good, but won't get much use. We all know that the DeLorean has a minimal amount of usable trunk space, and the deeper dimensions of the half-size trailer can solve that problem, but we usually just drive two DeLoreans instead because our problem is normally needing more family seating space rather than storage. Hmm... DeLorean rumble seat maybe?—now that's a useful idea! (that's just a mom/woman's point of view—right?) For now, the Santa sleigh will just take up space until it gets shown at more future events. (see the debut at River City Autofest starting on pg. 19, and all of the "D-tails" starting on pg. 25.)

There's lots of good reading in this dressed-up Holiday issue, with loads of photos included too. You'll especially love the very colorful new Holiday ad from DMCH. (We'd like to welcome Jill to their team—she's doing a great job in their advertising department.)

Thanks to everyone for all of your hard work. It helped to make this one of the easiest issues to compile. We appreciate you!

Happy Holidays!

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# MONSTER MASH

Article & photos by:  
Rich Weissensel



Q: What do you do with a DeLorean monster truck for Halloween?

A: Use Halloween as a good excuse to drive over a few dozen pumpkins!

**M**ost children like monster vehicles, cool cars, and smashing things, so when you put them all together in one event, you create a child magnet. All these things came together over Halloween weekend this year at the Monster Mash event at the Volo Auto Museum in Volo, IL.

Although there was typical Fall weather for Chicago with 50 m.p.h. winds on Saturday, and a light mist with 40 degree temperatures on Sunday, it was a very good turn out for the First Annual Monster Mash

event. In addition to the D-Rex smashing pumpkins, the Monster Garage GT40RC was also on hand for the crowd to view and to take photos standing next to it. After the pumpkin crushing preview on WGN TV the Friday before, the D-Rex took over all pumpkin crushing on the weekend while two other monster trucks, the Brute Boss Hogg and the Chicago Outlaw, flattened a number of junk cars twice each afternoon on both weekend days. The Boss Hogg crawled over cars in slow motion while the Outlaw took to the air.

**Anyone need a few hundred pounds of pumpkin seeds? (tire marks included)**

The D Rex and the GT40RC were on display outdoors for the Monster

Mash event, but will be on display indoors over this winter. Depending upon floor space, the vehicles may be displayed together or apart, but I have an agreement with the museum that I can promote our local DMC club and any other DeLorean related club, vendor, or event that I choose to promote within my display area(s). This will be a huge opportunity to promote the DeLorean marque, vendors, clubs, and events in a new way. Banners, signs, pamphlets and flyers are all encouraged to help promote the marque.

The vehicles will be on display at the museum through the spring, so if you happen to be in the Chicago area over the holidays and you need your "DeLorean fix", stop by the Volo Auto Museum. The museum hosts a very





extensive collection of famous movie and TV vehicles, and the largest muscle car collection. Of course, there is a DeLorean time machine and a Back to the Future display complete with various DMC models for sale.

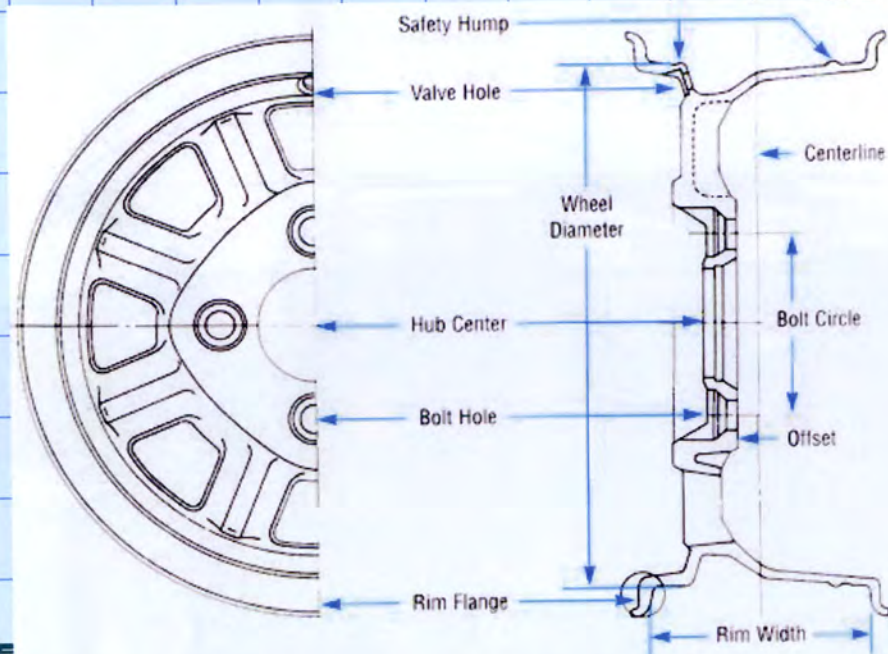
The Volo Auto Museum is located about 50 miles northwest of Chicago, 50 miles east of Rockford, IL, and 50 miles southwest of Milwaukee, WI, about 1/2 mile west of Route 12 on Highway 120, 13 miles west of I-94 in Volo, Illinois.

More Monster Mash event details can be found at the following link:

<http://www.volocars.com/news16.html>







## Adapting to Change...

### in wheel and tire styles

A number of trends have been slowly converging over the last few years that will change the look of many DeLoreans. Many well-known tire manufacturers have quit making performance tires in the size combinations that are required for the DeLorean, leaving the high-performance driving enthusiasts to "make do" with tires better suited for the family sedan. Another trend in the automotive wheel industry is towards larger wheel diameters for a more aggressive look, and to make room for larger and more efficient brake systems. These larger wheels are driving the development of ultra low-profile tires that are optimized for cornering and handling, with tread designs and materials that are computer designed and light years ahead of designs from just a few years ago. The performance wheels available today are dramatically stiffer and lighter than the stock DeLorean "turbine-style" wheels that are a large part of the signature look of our favorite car. Yet another trend is the advent of performance

Article and photo by:  
Toby Peterson

suspension components such as progressive spring rate coil springs and fully adjustable shock absorbers.

Performance-oriented drivers have started to recognize the importance of maintaining the proper interactions between the tires, wheels, and suspension systems. If the tires have a certain "effective spring rate" based on sidewall flexibility and air pressure that is not compatible with the spring rate of the coil spring/shock absorber system, the overall handling and comfort of the car suffers. The ride can be bouncy and jittery, with poor suspension compliance and inadequate road holding capability. In general terms, lower profile tires with stiffer sidewalls will have a much lesser chance of interacting negatively with the rest of the suspension system, allowing the suspension to work as designed. This is leading many DeLorean enthusiasts who want to improve the handling and create a more aggressive look for their stainless steeds to install larger

diameter wheels with modern low-profile high-performance tires.

Wheels are defined by many parameters; diameter, offset, bolt pattern, weight, and stiffness are the more important aspects to consider. All things considered, the offsets of these aftermarket wheels represent the greatest hindrance to a successful installation. Most of the performance wheels currently available are designed for the average front-wheel drive or all-wheel drive car within a relatively narrow range of offsets that are close to that found on the front wheels of the DeLorean. This aftermarket range is in the general neighborhood of 40-42 mm while the DeLorean front wheel has an offset of 39 mm. However, the rear wheels of the DeLorean are very different, with more of a "deep dish" look and an offset of only 21 mm. If you were to put a set of aftermarket wheels on the DeLorean without correcting for this difference, the front wheels would appear to be in about the correct position, from a width or "track" perspective, while the rear wheels would appear to be pulled in considerably, with an awkwardly narrow track. Aside from the cosmetic issue of the rear wheels and tires not filling the wheel arches for that correct look, this offset error will load up the wheel bearings differently, which may affect the service life of the bearings. Properly correcting for this offset difference is the focus of this article.

Some people think that all that needs to be done to correct the rear wheel offset is to slap a set of cheap spacers on between the wheels and the hubs, and crank the lug nuts extra tight. This simplistic thinking is flawed at best, and dangerous at the worst. If you do the math, the offset correction needs to be in the general range of 20-25 mm (1 inch = 25.4 mm) in order to put the wheels out where they "belong". The thickest typical



spacer that can be safely used with the original lug studs is about 5 mm. Above that thickness, there is not enough thread engagement between the lug nuts and the studs, which could lead to thread stripping and loss of a wheel. Even if longer studs are installed to account for the additional thickness of spacers, without additional precautions the studs can suffer from cyclic bending as the wheels shift around on the face of the spacers. These bending stresses can cause the studs to fail due to fatigue. The movement of the wheels can also cause vibrations and wear on the suspension components. However, there is a safe and reliable solution to all of these vexing problems.

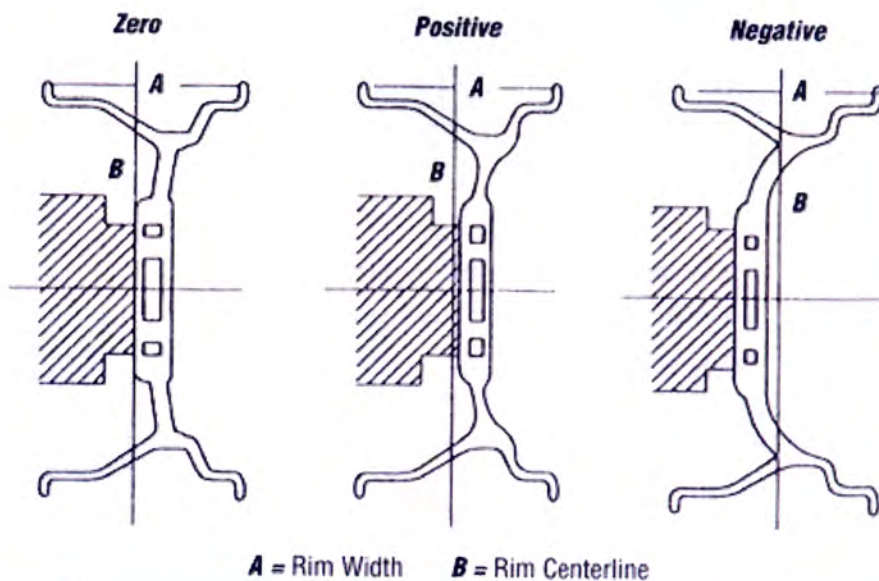
The very best method for installing modern aftermarket wheels on the DeLorean is to use a special type of wheel adapter that features a "dual-centric" design, particularly on the rear due to the large offset error. The DeLorean hub has a machined shoulder that is sized to accept a corresponding counterbore (also called a centerbore or pilot diameter) in the original DeLorean wheel. This allows the wheel to lock securely onto the hub when the lug nuts are torqued down, keeping the wheel perfectly centered for a smooth ride. This arrangement also allows the hub shoulder to carry all of the shear loads from the wheels, which eliminates bending stresses in the lug studs. All aftermarket wheels have a counterbore, although the diameters and depths of the counterbores vary greatly by manufacturer, wheel style, and wheel size. The dual-centric wheel adapter offered by DeLorean Parts Northwest is specially machined to fit the DeLorean hub shoulder on one side, and is also custom machined with a slightly tapered flange to precisely fit the aftermarket wheel counterbore on the other side. This arrangement allows the

wheels to remain perfectly centered on the adapters, creating a smooth ride and extremely low bending stresses on the lug studs that attach the wheels to the adapters. There are two sets of lug holes in these adapters. One set of holes are used to attach the wheel adapters to the hubs using special low-profile high-strength lug nuts on the stock DeLorean studs, and the other set of holes are for new studs that are pressed into the adapters and face outward towards the wheels. The two patterns of holes are spaced 45 degrees apart from each other. Using appropriate materials for the adapters is also very important for safety and reliability. The best material to use for an ideal combination of strength and light weight is forged 6061 aluminum alloy. The process of forging creates a material that is equally strong in all directions, without the pronounced "grain direction" that is found in typically used aluminum sheet and plate stock.

Even though the offsets for most aftermarket wheels are "close enough" to the DeLorean offset on the front wheels, it may be necessary to use a relatively thin spacer in order to adapt the wheel counterbore diameter to the

DeLorean hub diameter, if they are different. Another challenge that has been discovered is that the stock DeLorean front lug studs have a shoulder on them that may prevent an aftermarket wheel from seating properly if the inner mating surface of the wheel (the mounting surface) does not have any recesses in the lug holes to allow for the shoulders. A spacer is required for this condition, unless the lug studs are replaced with new studs that are fully threaded all the way to the mounting surface of the hub. These spacers can be either hub-centric or dual-centric, depending on the diameter of the wheel counterbore relative to the DeLorean hub diameter.

Other issues to be considered when evaluating wheel offsets, diameters, and the other factors, include tire clearances with the wheel arches during all possible suspension travels, and tire clearance to the suspension components. If wide wheels and tires are installed on the front of the DeLorean, the clearance between the tire outside edges and fenders should be carefully checked throughout the entire turning range and vertical movement of the tires. If they make contact at any point,





the tires or the fenders may be damaged. A lowered car is even more sensitive to this condition. Also, the clearance between the tire inside edges and the front sway bar should be checked in the same manner. Turning to the DeLorean rear suspension, there may be significant clearance issues with the tires and the lower shock absorber mounts if the offsets are not corrected to place the wheels farther outboard. However, clearance between the tires and the rear quarter panel wheel arches must also be considered, especially in a lowered car. As you can see, there are many things to consider when replacing the stock DeLorean wheels with modern aftermarket wheels and tires. When done properly, this performance modification can dramatically enhance the sporty and aggressive stance of the DeLorean, while also improving the handling and safety of an already excellent car.



For further information on aftermarket wheel fit on the DeLorean, or for any other questions relating to improving the DeLorean ownership experience, please contact the author via email at [Toby@delorean-parts.com](mailto:Toby@delorean-parts.com). Visit DeLorean Parts Northwest on the Web at [www.delorean-parts.com](http://www.delorean-parts.com).

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\*See our website [www.delorean-parts.com](http://www.delorean-parts.com) and click on part number for details on these accessories.



K2200DP

## WINGS-A-LOFT™ K2200DP - Deluxe Remote Door Opening System

This system has all of the capabilities of the K2100DP, plus an integrated Stellar ST9000 state-of-the-art alarm system. The system also includes two 4-button remotes, lightweight actuators, linkage, and complete installation instructions. However, the Deluxe controller has fewer available auxiliary channels, so there is a limit to the number of add-ons that you can install. This system is priced at \$249.95, the ST9000 comes with a limited lifetime warranty and the available add-ons are:

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### NOTE:

NONE of the Remote Door Opening Systems replace the door lock solenoids with actuators; see the K1007DP Door Lock Actuator Upgrade for that function.



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# Yes Virginia, there is a way for a K-Jet to keep up with a turbocharger!

Article and Photos By: Joe Kuchan

As parents know all too well, simply having kids is often the easy part, but making them get along together, now that's the real trick! And so it is with add-on turbochargers and DeLoreans. Bolting on a turbo is the easy part, but getting your K-Jet<sup>1</sup> to flow enough fuel to keep pace with it is something else altogether. In this article I'll give you all the parenting skills you need to persuade your K-Jet to "make nice" with your turbocharger. At long last, the mystery of getting a DeLorean's K-Jet to *really* keep up with a turbo has been solved.

There are a couple of problems with this approach, however. First, shorting the lambda sensor to ground precludes any possibility of using an Air/Fuel (A/F) meter to monitor mixture under boost.



A/F meter and boost gauge mounted in right knee bolster.

Like the ECU, an A/F meter is driven by the signal from the lambda sensor. If we short the lambda probe to ground to trick the ECU, we are also shorting the A/F meter to ground rendering it inoperative just when we need it the most. Solving this problem was easy. Instead of shorting the lambda sensor directly to ground, I used a relay to ground only the ECU's lambda input. (Figure 2) When not under boost the lambda probe and A/F meter are

connected to the ECU. The ECU continues to control the mixture using the frequency valve and the A/F meter indicates the mixture. When the Hobbs switch detects boost, the relay disconnects the lambda probe and A/F meter from the ECU and switches the ECU's lambda input to ground. The ECU now sees a simulated lean condition and does its thing with the frequency valve, but the lambda sensor and A/F meter continue to correctly display mixture conditions.

## Looking for fuel in all the wrong places

The second (and more difficult) problem is that the frequency valve is somewhat limited in its effect. It has the ability to control A/F mixtures for normally-aspirated engines under most driving conditions, but beyond modest boost pressures the mixture leans out leading to loss of power, or even worse – detonation. This problem has been vexing owners of DeLoreans with add-on turbos for years. Almost everything has been tried in the past with varying degrees of success, including using the cold start valve to enrich the mixture, adding supplemental injectors, raising

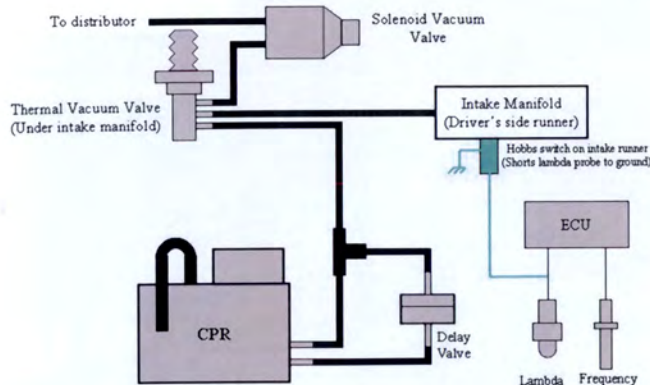


Figure 1  
B.A.E.'s enrichment scheme.

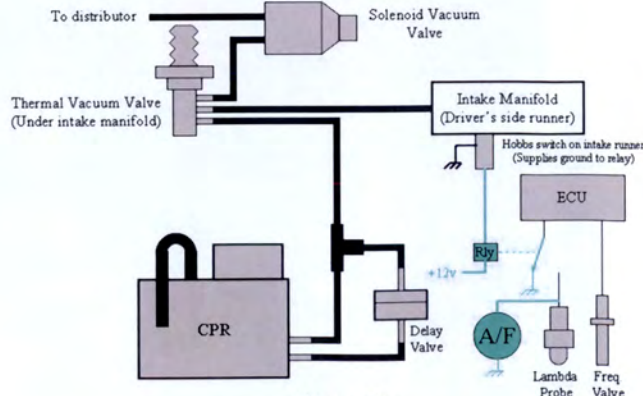


Figure 2  
Using an Air-Fuel meter with a relay.

<sup>1</sup> Throughout this article I'll use the shorter term "K-Jet" to refer to the Bosch "K-Jetronic with Lambda" fuel injection system as used on the DeLorean.



fuel pressure, going to higher-flow injectors, and even ripping the K-Jet off the car and replacing it with a completely different fuel injection system. None of these approaches is really satisfactory, being either too complicated, too expensive, or simply ineffective.

The approach described here is none of those things. It uses just a few inexpensive parts to make the venerable K-Jet deliver plenty of fuel for safe and powerful performance.

Past difficulty in getting K-Jets to meet the demands of turbo cars has given rise to the popular opinion that it doesn't have the capacity to handle boosted applications. On the other hand, some experts have claimed that a DeLorean's K-Jet is capable of delivering enough fuel for applications up to around 210 horsepower or so. (Although nowhere could I find an explanation of just how to actually achieve that!) I think it was after Peter and I ran an injector balance test on his car and saw the K-Jet fill six baby food jars with gas in just a minute or two that we came down on the side of the 210 horsepower experts. (Yes, I know it's harder to inject fuel into a pressurized manifold than into baby food jars at atmospheric, so we'll just skip that conversation!)

### *How it works--How it's done*

To understand how and why the modifications described here actually work, it helps to know how the unmodified K-Jet handles enrichment. (Figure 3)

There are three main enrichment mechanisms on the DeLorean:

- The cold start valve
- Cold engine enrichment by the warm-up regulator, AKA the control-pressure regulator, (CPR)
- Acceleration enrichment, also provided by the CPR

As for the cold start valve, it operates only briefly during cold starts, so we won't discuss it here except to say that in the past others have tried to use it to provide extra enrichment for turbo-boosted cars, but with very poor results.

It should be noted that the frequency valve is also used to control A/F mixture, but its role is not really one of enrichment. Rather, it is used by the ECU to maintain the stoichiometric A/F ratio of 14.7:1 under typical driving conditions. I'll refer to the frequency valve again so let me briefly explain how it works. In the fuel distributor there is a differential-pressure valve for each injector fuel line. These valves are small chambers separated into upper and lower halves by a diaphragm. They attempt to maintain a constant pressure drop across the upper and lower halves of the chamber, independent of the amount of fuel that is flowing to the injectors. By lowering the lower chamber pressure, the diaphragm deflects downwards as it attempts to maintain the constant pressure drop. This allows more fuel to flow to the injector. The frequency valve is a solenoid-operated valve controlled by the ECU in response to the output of

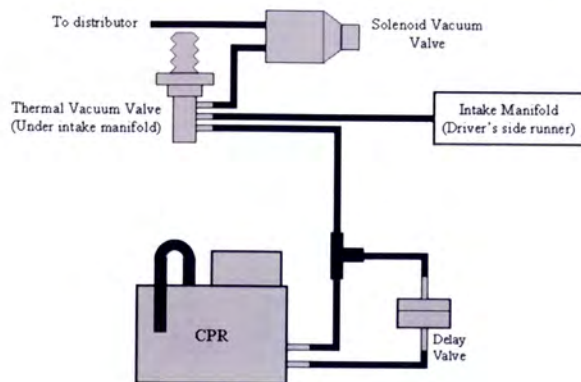
the lambda probe. It acts like a bypass valve between the lower chambers of the differential-pressure valves and the main fuel return line, so that when open, it lowers the pressure in the lower chambers. If the ECU sees the mixture is getting too lean, it increases the duty cycle of the frequency valve, thus lowering the pressure in the lower chambers and increasing the fuel delivery. If it sees the mixture is getting too rich, it reduces the duty cycle of the frequency valve, thereby raising the pressure in the lower chambers and decreasing the fuel delivery.

### *It's all about the CPR*

The CPR, as its name suggests, regulates control pressure. Control pressure pushes downwards on top of the control plunger inside the fuel distributor, effectively countering an upwards force exerted on the bottom of the plunger caused by air flowing around the air flow sensor plate. The dynamic equilibrium achieved between these two forces determines the position of the control plunger and the amount of fuel that flows through the fuel distributor to the injectors.

The way the CPR varies the control pressure is by acting as a "bypass" valve that shunts fuel from the top of the control plunger back to the tank. If it is bypassing very little fuel, the control pressure is kept high such that the control plunger does not rise very much for a given amount of air flow, and the amount of fuel flowing to the injectors is decreased. In other words, the car runs leaner. If it is bypassing a lot of fuel, the control pressure drops and the control plunger rises, flowing more fuel to the injectors. The car then runs richer. (Or "fatter", if you prefer.) Changes in control pressure dramatically affect fuel flow rates.

The CPR used on the DeLorean contains two diaphragms that are acted on by a variety of forces including the force of a heated bimetallic spring, three coil springs, atmospheric pressure, and before the motor is fully warmed up - manifold vacuum or pressure. The upper



**Figure 3**  
**Stock enrichment.**



diaphragm in the CPR is actually a valve that shunts gas around the fuel distributor and back to the tank. There is a heated bimetallic spring under the upper diaphragm. When the engine is cold, the bimetallic strip presses down against two of the coil springs allowing the upper diaphragm to deflect downwards. This allows the CPR to bypass more fuel and to control drops in pressure, providing enrichment to the motor. To make sure that the enrichment period does not last too long, when the car is first started a voltage is applied to a heater attached to the bimetallic strip. The strip begins to bend upwards, allowing the full force of the coil springs to push upwards on the upper diaphragm. This has the effect of closing this "valve", thus raising the control pressure and gradually leaning out the mixture. By the way, the CPR is mounted directly to the driver's side valve cover so that once the motor is warmed up, the heat of the engine keeps the bimetallic spring bent upwards. This enrichment function during warm up is why the CPR is often called a *warm-up* regulator.

Provided that the motor is not yet fully warmed up, the CPR will also provide an acceleration enrichment "spike" lasting a second or two when you step on the gas. At the bottom of the CPR is a chamber separated into two halves by another diaphragm. Pressure differences between the upper and lower parts of the chamber will cause the diaphragm to deflect upwards or downwards. There are vacuum ports connected to the upper and lower parts of this chamber. The upper half is connected through a thermal control valve to the intake manifold. The lower half is connected to the same point, but through a vacuum delay valve. When the car is accelerated, manifold vacuum decreases. This decrease is felt immediately in the upper half of the chamber; but the vacuum delay valve "bleeds" this change of pressure more slowly to the lower half of the chamber. The result is that - for just a second or so - the pressure in the upper half is greater than in the lower half, and the diaphragm deflects downwards. The CPR's lower diaphragm provides a seat for the

innermost of two concentric coil springs that are pushing up on the top diaphragm. When the lower diaphragm deflects downwards, the seat for the innermost spring is lowered and the total upwards force on the upper diaphragm is reduced. The upper diaphragm deflects downwards for a second or so, dropping the control pressure for the same amount of time. The car runs richer for a brief period, which provides a little extra power for the acceleration. Since the acceleration enrichment function isn't really needed once the car is warm, it is disabled by the thermal control valve which disconnects the CPR from the manifold vacuum source after the coolant gets hot. This saves fuel and reduces emissions.

I've left out a few details about the CPR, but that's basically how the DeLorean's CPR works to control the mixture during warm up and acceleration.

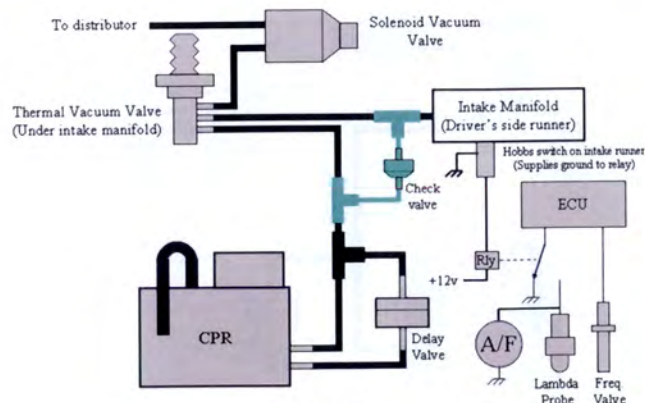
### Using what we've got

In the movie *Apollo 13*, a NASA engineer (tasked with saving the astronauts from CO<sub>2</sub> poisoning by using only what was on board the spacecraft) said, "Okay, people. Listen up. The people upstairs handed us this one and we gotta come through. We gotta find a way to make *this...* fit into the hole for *this...* using nothing but *that*."

The NASA guys didn't have much to work with, but in the end it was enough. Fortunately, we have almost everything we need already "on board" too.

Again, on a normally-aspirated car the only time we need enrichment in excess of what the K-Jet can achieve with the frequency valve is when the car is cold, and especially during cold acceleration. So Bosch designed the DeLorean CPR to provide extra fuel under those conditions only. After warm up the CPR simply maintains a steady control pressure while the ECU generally tries to maintain the stoichiometric A/F ratio of 14.7:1 using the frequency valve. But when the command from the wheelhouse of a turbo car is "all ahead full", richer mixtures (even as rich as 12.5:1) are preferred, as they provide extra power and help prevent detonation. B.A.E.'s approach fools the ECU into using the frequency valve to drive the mixture as rich as possible, but the increased fuel demands of a turbo car can't be fully met by the frequency valve alone. (I'm not familiar with the Legend or Island setups so I can't comment on their enrichment schemes or how well they perform, but if they could also benefit from extra enrichment, the mods described here should work just fine.)

A look at the DeLorean vacuum diagram (Figure 4) shows that simply by adding a vacuum check valve across the thermal delay valve, the CPR is reconnected to the manifold under boost. A vacuum check valve is a valve that flows in one direction only, and has a "cracking" (opening) pressure that is very, very low. Essentially as soon as any air pressure builds up on the source side of the valve it opens and allows that air to flow through, but it closes quickly if anything



**Figure 4**  
Restoring the enrichment spike under boost conditions.



tries to flow through in the other direction. You can think of it as a diode, but for air. Check valves are available at auto parts stores for just a few dollars. I happened to get one for free as a sample from the manufacturer.



**Vacuum check valve with 3/16" barb fittings on each end. Air can flow in only one direction through such a valve.**

The change was noticed as briefly lighting three extra LEDs to the rich side on the dash-mounted A/F meter when accelerating under boost, and slightly better throttle response. Not a bad return for five minutes worth of work and a couple of bucks for parts!

This easy and inexpensive mod is clearly worth doing, but because the vacuum delay valve will equalize the pressures in the two halves of the CPR's lower chamber very quickly, it is only a partial solution. What will happen if we stay in boost for more than a few seconds? By now the answer is obvious. The car will run rich during the first second or two, which is good, but then it will lean-out again, which is bad. Potential power will be sacrificed and we'll be at risk for harmful detonation.

Figuring out how to *maintain* the extra enrichment under continuous boost took more thought, but once again an example of what we needed turned out to be already "on board" in the form of the vacuum solenoid used to control the distributor vacuum advance.



**Vacuum solenoid used for DeLorean spark advance control.**

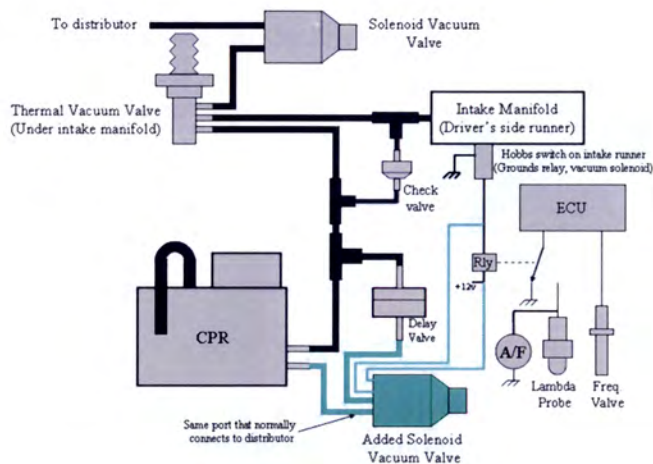
This device is nothing but an electrically-operated ON/OFF vacuum switch with a slight twist. It is controlled by the idle switch and has two vacuum ports that it either connects through to each other or disconnects from each other. The twist is that the port that normally goes to the distributor is vented to the atmosphere when the switch is open. It was designed this way so that the vacuum in the distributor's vacuum motor is bled off allowing the vacuum spark advance to go away when the motor returns to idle.

By putting one of these solenoids between the vacuum delay valve and the bottom half of the CPR's lower chamber, and controlling it with the manifold mounted Hobbs switch, we have the means to vent the bottom half of the CPR's lower chamber to atmosphere while the upper half remains connected to the manifold. (Figure 5)

equalize; the lower diaphragm will stay deflected downwards, and the enrichment will be constantly maintained. (The vacuum solenoid is available from the DeLorean parts vendors.) When there is no boost, the solenoid is de-energized and the vacuum delay valve is connected through the solenoid to the lower port of the CPR such that the CPR functions normally. We now have *persistent* boost-sensitive enrichment (present only when needed) done on the cheap, and for less than two hours of work!

## Summary

Boost-sensitive CPRs are not new. They have, in fact, been used on many K-Jet-equipped factory turbo cars from Porsche, Audi, and Volvo. What's new here is recognizing the potential of the DeLorean's K-Jet and CPR to be reconfigured into a boost-sensitive



**Figure 5**  
Using a solenoid valve to sustain enrichment under boost.

Now, as long as the manifold is under pressure, the upper and lower halves of the CPR's lower chamber will never



**Vacuum solenoid mounted on driver's side intake runner.**

arrangement, and figuring out how to do that simply, at low cost, and without compromising drivability under any conditions.

The results of these easy and low cost changes on Peter's car are that the A/F meter now shows three more LEDs to the rich side and has slightly more power under boost. The improved performance is welcome, and we rest a lot easier knowing that this mod provides a greater safety margin for the motor.

Now go have some fun!







## CHROME PRV

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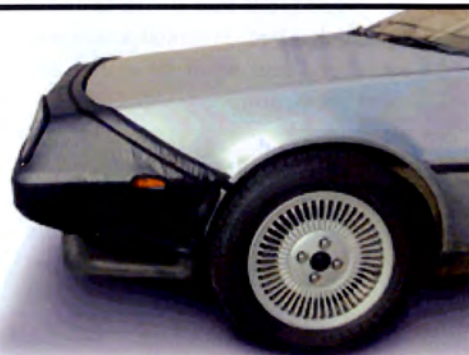
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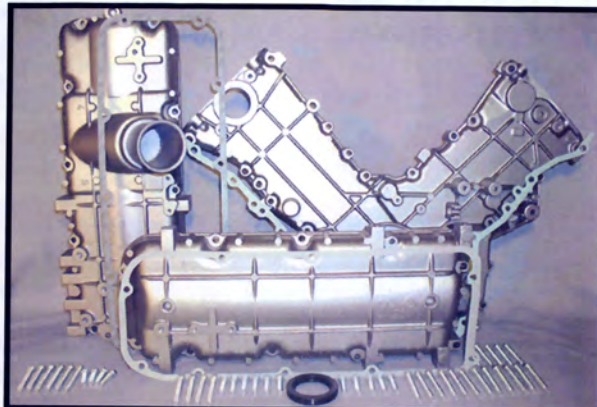
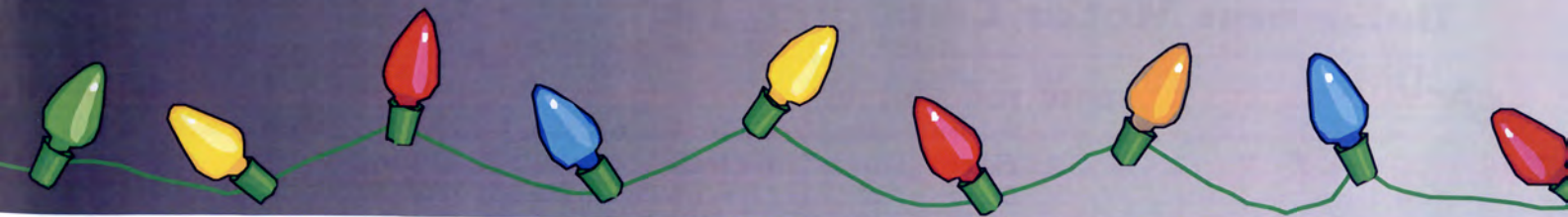
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Cost is \$179.00. You can order online at [www.delorean.com](http://www.delorean.com) or call (800) USA-DMC1.







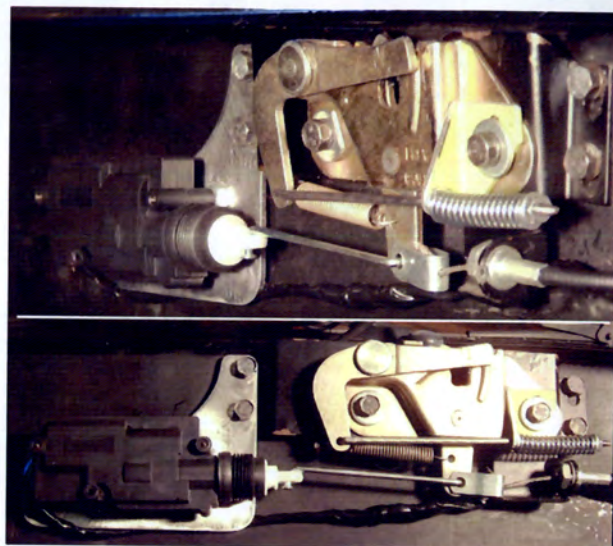
## DELOREAN COVER-UP SET

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# Evansville, Indiana

Photos by: Ron and Cheryl Wester

Article by: Cheryl Wester

DeLorean scrapbook art by: Jaime Wester

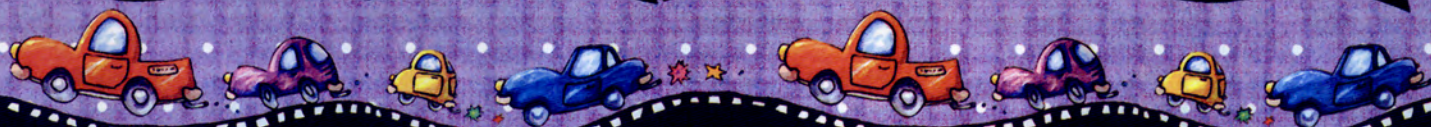
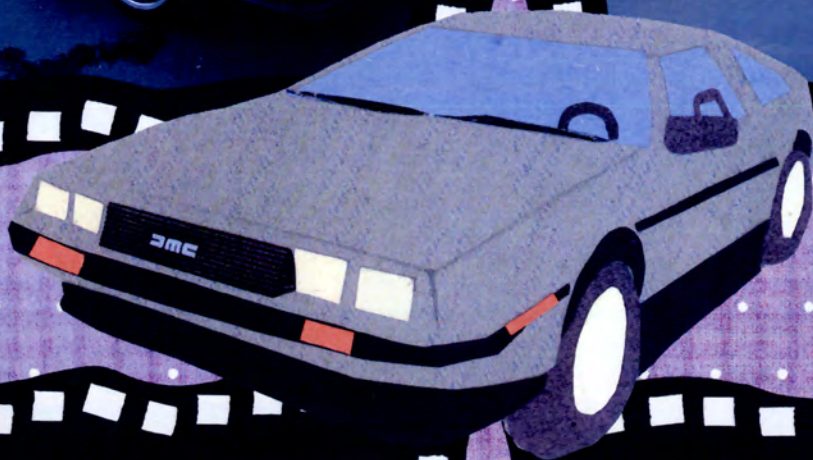




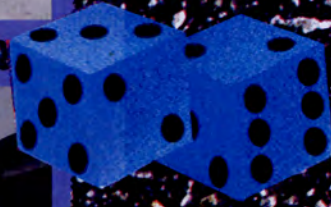
This year, we stayed at the Hampton Inn, and there were also many changes at the Autofest. One of the main changes were the number of days to participate in the show - it was only held on Friday and Saturday, and didn't include Sunday events as in the past. They had another major change in sponsorship which was Toyota; presented by Toyota Motor Manufacturing, Indiana, Kenny Kent Toyota, and Downtown Evansville Inc.

When we arrived at the Hotel, we met up with the rest of the gang (six more DeLoreans) and decided to hang out in a pizza place for the rest of the evening to save the car show activities for the following day. We had a good time visiting and sharing our stories with one another from the recent summer show in Pigeon Forge. Our cars drew attention to the employees that took turns running out to the parking lot for a look!

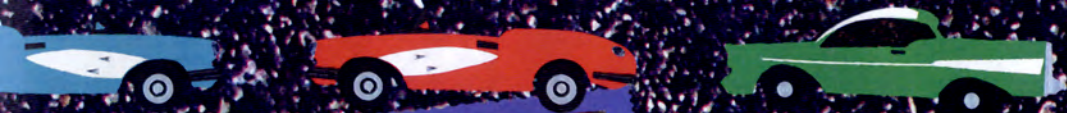
We took our time getting ready to drive out to the Autofest on Saturday morning. We also took our time driving through the streets downtown because we didn't want to attract the wrong kind of attention with the local authorities as the previous year... if you know what I mean!











As usual, there were plenty of other cars to see if you enjoy venturing out over several blocks to catch a glimpse of all of them. Other activities were also available as in the past, along with a few new events.

The many public spectators seemed to welcome our little group of Ds on display with much enthusiasm... all 11½ of them! The half DeLorean little yellow trailer's debut was a novelty well received. It's always fun answering questions and keeping the interested people well-informed, but one thing that stands out in my mind was when an excited family strolled by and the father said to his son, "When you go back to school on Monday, you can tell everyone that you saw 11½ DeLoreans!"

Our co-participants with the Starsky and Hutch Ford Torinos attended again, and this time, they were very pleased to count only 11 of our cars because they had finally beaten us by having 17 of their cars in attendance. It was their turn to win the "best club participation" award.

The show added a class for Ds this year. We didn't stay for the awards ceremony, but left before dark and waited for our Texas Roadhouse reservation (which was on the corner of the hotel parking lot). We closed the place, and still hung out in the parking lot until the wee hours.

Once again, we took our time leaving the hotel on Sunday - like we were all on a vacation or something, but it seems like we always make up for the lost time on the highway! We continued our tradition of shopping in a little strip mall in Mt. Vernon along the way back. That's all from our road trip.

## ROAD TRIP

P.S. I found out on Monday that I won the "Best DeLorean" award!

# ROAD TRIP







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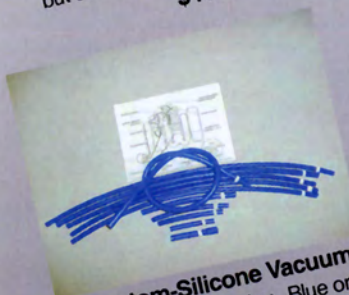
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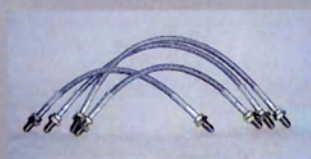
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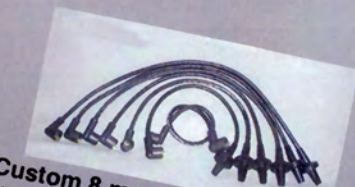
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The above relay kit will bypass the contacts in the switch and run the current through the relay and save the switch. Comes with complete instructions and no special tools needed.

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All you need for the tank + the fuel filter. Includes new SS clamp for the boot, and clip for the return line. 957-style pump

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Temperature/coolant fan switch.

Lower left-hand water pipe.

Don't strap your circuit to run all the time, just install the right one for your climate. Includes rubber gasket.

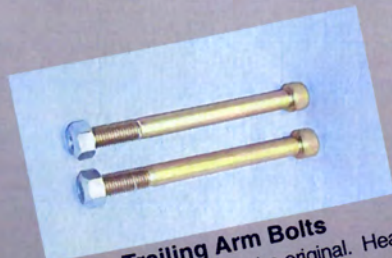
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### Fuel Tank Baffle Assembly

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This is an upgrade from the original. Heavy cad-plated for greater rust protection. 12.9 vs. 10.9 tensile strength. Connecting to frame and trailing arm.

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### DeLorean Accumulator

For hot-start problems-this is it most of the time, if not then call me.

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### Air Bleeder

Don't overheat. Install the air bleeder and protect the cooling system.

**\$24.95**



# D-TAIL

Story and photos by:  
Ron Wester and  
Rich Weissensel



In the first issue of **GULLWING Magazine**, we told you that we would do a write-up on building a DeLorean trailer. Well, we did the build, or should I say, we had it done! With the help of some people in the DeLorean community, a fiberglass fabricator, and our favorite body shop, we set out to build the world's only painted "D" trailer. Of course, we are all familiar with the stainless steel "D" trailer that belongs to Arnie Brandon in the Pacific Northwest. What an awesome piece of work! But we wanted to try building our trailer a

little bit different. With the inspiration of Arnie's trailer and many other look-like-the-car trailers we have seen at car shows, we went to work on a plan that would make the build easy and not too expensive.

To start off with, we decided to use the D's tub as the support structure for the body panels. This would save a lot of time and money by not having to fabricate from scratch a framework to bolt the body panels to. We also decided that since this trailer would be painted,

we could take advantage of the paint covering up any custom body work we wanted to do. That custom work turned out to be the fabrication of a wider rear fascia that would blend into the back of the front fenders.

For the tub and trailer frame/axle setup we turned to Rich Weissensel of "D-Rex" and "Monster Garage" fame. Rich seems to be into unusual builds, so he was definitely up for the challenge of a DeLorean trailer. I've asked Rich to tell us about his involvement in the build...

I'm not exactly sure when Ron and I had our first conversation about a custom DeLorean trailer, but it might have been when we were both standing in the showroom at DMCH at the Open House in 2003, looking at a few "stock" DeLorean trailer hitches sitting in a corner. I remember saying, "You know it would not be too hard to build your own one of those for a DeLorean", and I think that's when Ron said he had an idea for something he would like to have his DeLorean tow, specifically a little yellow DeLorean trailer to tow behind his

Screamin Yellow D. A custom hitch and trailer were great ideas.

There were many D trailer concept ideas considered during our discussions, including the idea of building the D trailer with the rear portion of the DeLorean body. Although this idea would have allowed for much more storage space, there were significant aerodynamic issues that could not be resolved easily and inexpensively if the entire rear quarters and louver were used, so a tentative decision was made to build a trailer

based on the front tub.

During the summer after the Open House, Ron inquired about the DMCH hitches that were in the showroom. By the end of summer, the decision was made that a custom-built hitch would be better for the Yellow D than a "stock" hitch, since the rear fascia ground effects needed to be figured into the project. I got an email and then a follow-up call from Ron stating that he wanted to get the "D" rolling by having a custom DeLorean hitch fabricated so that little or no portion



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of the rear ground effects would need to be trimmed. As a clearance compromise, the end result was a small notch, just to be safe.

With photos of several hitch styles and designs, I sketched an idea for the custom hitch. Since I had both a DeLorean with and without an engine/transmission installed, I was able to take precise measurements for specific mounting locations. Ron also wanted clearance for another future engine upgrade. Once the measurements were done, fabrication went quickly and the hitch was completed in less than one evening's work. The hitch utilizes a stock 2" square receiver, not for towing capacity, but for ease of finding the receiver inserts, and since the 2" inserts are more common, they cost less.

Ron came up to the Chicago area for the DeLorean Midwest



A surprisingly simple hitch fit well!



Steve Stump grinding for a good fit.

Connection's Fall Tech Session '03 to inspect the hitch and take it back home to be installed. Happy with the results of the hitch, Ron asked me to work out a plan to fabricate a trailer frame that would support the front section of a DeLorean tub and would utilize hubs that have the same bolt pattern as the DeLorean. Since I had a spare tub from an engine fire-damaged DeLorean, I figured it was a good time to use the front section for Ron's project and the remaining center section to support the fiberglass body of my BTTF prop car. Win win.

I accepted the challenge and went to work on the sketches. The goals were to create a trailer that would tow well at expressway speeds, utilize most of the front tub from a DeLorean (but make the storage area a bit deeper), make the trailer tongue long enough so the front trailer fascia would not hit the rear car fascia (even in tight backup maneuvers), and fabricate



...and cutting...



...and welding.



Parts from the local trailer supply.

hubs that have the same bolt pattern as the DeLorean. The challenge begins.

After trying to find trailer hubs that would match the DeLorean bolt pattern, I decided it would be best to use a set of used DeLorean hubs attached to a trailer axle, and after verifying measurements to keep the trailer's "track" the same width as the front of a stock DeLorean, the DeLorean stub axles were welded to the ends of square stock tube to create the DeLorean trailer axle. However, the method used to weld stub axles to the trailer axle was complex.

The next step was to cut the fiberglass tub into two pieces; the front bonnet section and the center section. Note: the rear section had been burned away during an engine fire, so there was nothing left to remove from the rear. The center section was set aside to be used on my BTTF prop car in May 2004. The front section was trimmed straight and the spare tire section was cut out to make room for a deeper storage area for the finished D trailer.



Sacrificial front tub.



"D" hub welded to square axle.



After turning the front section over, final measurements were taken for the box frame dimensions and the "bed" of the trailer was cut and welded together in no time. Several locations were defined for mounting the tub to the frame, including utilizing the original front shock mounting holes. While the tub was in the "flipped over turtle position", the tongue was welded in place and a stock trailer leaf-spring suspension was added along with custom spring mounts.

After everything was test fitted, the trailer and tub were separated to paint the trailer, then the tub was re-secured to the trailer, a 2" ball coupler and safety chains were added, a test set of OEM front DeLorean wheels were installed, and the D trailer went on a short shake-down test tow. It passed. A big thanks goes out to my longtime friend and fellow Monster Garage build team member Dennis Steibel,

by assisting me with his brand new metal cut-off mitre saw and his portable welder. Without some outside help and the right tools, these projects would have taken me a lot longer to complete for Ron.

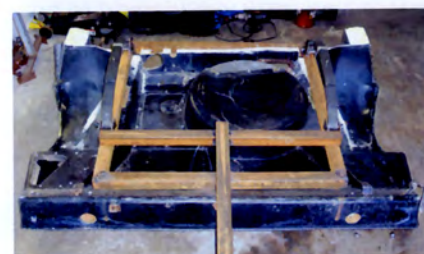
Ron was contacted for the D trailer pick-up and while he was up this way, Ron looked at a few of my spare damaged body panels, test fitted on the D trailer to give Ron an idea of how the finished project may look. After a few photos, the D trailer was loaded up on Ron's car trailer, and he was back on his way. Although Ron considered buying and using some of my damaged DeLorean parts while he was in the area, he decided to go with more cost effective options.

Both Ron and I were happy with the results of the "base" for the D trailer,

but Ron still had a long way to go to get the D trailer done before DCS 2004.



Tack welded and re-checking fit.



Welded and waiting for the axle.



Axle positioned.



Checking fit with wheels installed.



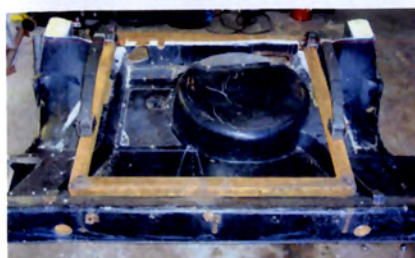
Trailer sub-assembly ready to roll.



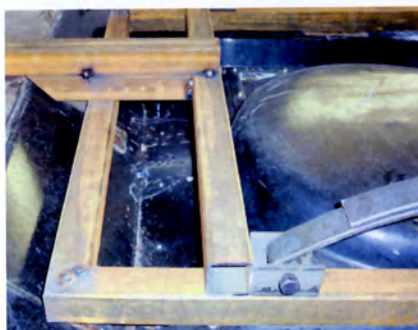
Front tub cut and ready.



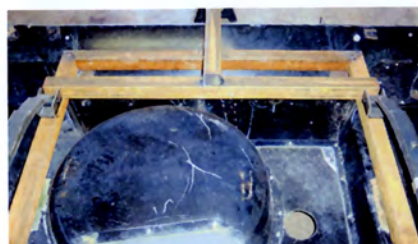
Subframe tacked and positioned.



Springs and perches positioned.



Drawbar and crossbrace in place.



A simple but effective setup.



Making sure springs line up.



Now that Rich had the base for the trailer done, the ball was back in my court. I made a quick run to Chicago and returned back home with my project strapped down to my car trailer. Then with a few email requests, parts were coming from DeLorean Parts Northwest, DeLorean Motor Center, and several other DeLorean owners from around the country. Since the project trailer was to be painted, we used parts that were not in perfect condition.

As the parts arrived, fenders and fascias first, I did some pre-assembly to help determine what customizing work would need to be done. It soon became apparent that the rear fascia was not going to easily match up to the back side

of the front fenders. The rear fascia needed to be wider and not as tall to match up with the fenders. After some discussion with my favorite body shop, it was decided it would be easier to make a mold of the original fascia and make it the dimensions needed for a good fit. I contracted an independent fiberglass fabricator who had experience repairing boats, and also fabricating miniature cars like the ones used at amusement parks. He decided to take on the job, so within a few weeks we had a custom, made to fit, fiberglass fascia. Our original plan was to bolt the fascia to the fenders and tub, add a few support brackets, and send her off to the body shop. Well, after doing just that, the body shop decided that there was not enough support for the new fascia, and that the wind coming up from under the trailer might rip the whole rear end off. The solution was to

fabricate a framework to support the fascia and a roll pan assembly to block the wind. The new framework was put together and welded in place to the existing frame. It had a support for the top of the fiberglass fascia and provisions for bolting a roll pan to the bottom.

This extra fabrication work was putting the project behind on the original deadline of the DCS Pigeon Forge event. One thing I've learned is that to do something good takes time and to do something excellent takes even longer. My body shop is "World Class" in my opinion, and they were not going to give up quality for a date in time. However, we still had hopes of making the show with the trailer.

Once the framework was completed and the fascia remounted, another change in plans would be



Our perfect hood came in with a twist.



Brackets fabricated to hold fenders.



Fiberglass fascia taking shape.



Attaching the fascia to the tub.



Blending the fascia to the fenders.



Fascia support under construction.



Support for fascia also holds roll pan.



to make the fascia blend into the fenders. I knew there was a ton of work involved in taking the rough molded fascia, and making it a paintable body component, but it would be a heck of a lot more work to blend the panels together. After a bit of consideration, I decided the body shop was confident in their ability to make this look like a one piece unit. I was right... it turned out awesome!

During the weekdays the body shop would perform their magic, and on the weekends I would bring the trailer home to do the minor unseen detail work. Wiring the lights presented an interesting problem. Since the D has a devoted blinker light instead of blinking the brake light like most

cars, the wiring would be a bit different than typical.

Before the grille could be installed, all of the retaining clips on the front fascia had to be replaced. Once the grille was installed, the headlight blackouts were fabricated out of plexiglass. The marker, tail, and license plate lights installed without difficulty. All that remained were the struts and hood latch.

Once all of the minor goodies were fit and attached, the trailer went back to the body shop for final prep before painting. Along the way, I installed the custom wheels that matched the Yellow D.

The body shop came through with flying colors on the paint job.

We took the little "D" trailer on its maiden voyage to the RiverCity AutoFest in Evansville, IN. Surprisingly, the trailer towed very well. The DeLorean has no problem at all pulling a small trailer like this. We will probably be making some adjustments to the trailer suspension, as it was a bit bouncy.

The "D" trailer was well received by the crowd of spectators. People had lots of questions about the construction of the 1/2 "D", and we had a great time watching the expressions on the faces of the spectators.

You ask, "Would I do this kind of project again?" Well, not unless somebody else paid for it!



Another view or the support.



Just out of the paint booth.



Blending the fenders and fascia.



Freshly baked-on paint is ready to go.



Ready to go to the AutoFest.



Blending almost done... what a job.



Install grille, lights, and...zoom, zoom.



Visting the National Guard in St. Louis.



# Slip me some skin!

*Article, photos, and graphics by: David Jacobs*



“Oh those sheep skin covers on your car are so sweet! Wow they look so great... and really tie the car together. No really... where did you score those righteous sheeps? Damn that's trick!!”

*(Note: This fantasy compliment is brought to you by the sympathetic side of reality. Now for the cruel side...)*



**H**ey you were warned, but you are still reading this... so here it is...

Sheep skins, they don't look so good. Yeah they are great for that '85 Civic, but your DeLorean? And God forbid if you have cow print seat covers! For shame!!

Help me, to help you, loose the "sheeps" and bring back the glory of those gray (or black) leather cows! Are you with me? Okay then. First step to redemption, get some new DMC cows. Where? Most of our esteemed vendors have new skins for your DeLorean—give them a shout. If you want something a little spicier than the stock leathers, contact a local upholsterer. If you remove the old leathers off your seats, the upholster should be able to use them as a template for new ones.

After hitting the Yellow Pages and calling some local upholsterers, I discovered how much I would have been gouged to have my new skins professionally installed. The prices ranged wildly from \$120 to \$220 a seat. Yikes! That's a lot of cash to fork over for something that will only take you a couple of hours or less! I have moderate experience reupholstering automobiles, and it took me about 30 minutes per seat. That includes removing and reinstalling the seat into the DeLorean. So don't shy away from this, it's a lot easier than you would imagine, and you will feel good knowing you saved enough money to buy that ivory back scratcher you've always wanted.

It looks difficult, but the DeLorean seats are actually quite easy to work with by most comparisons. As you may have noticed from the new leathers, the seat is divided into two sections consisting of the lower butt sitting half, and the upper slouched back supporter.

Wondering how we are going to tackle that headrest? You didn't honestly think I would give away the secrets and spoil it now, did you?

Enough chit chat, let's dive into this. Ready?

### **Shopping List:**

**Hog Rings** - Hog rings are little metal rings that hold the leather to the frame of the seat. These can be found at most fabric stores and upholsterers. You weren't thinking of reusing the old ones were you? Don't let those upholster clowns charge you more than \$0.04 a ring! I ran into plenty who thought I was foolish enough to pay \$10 for a box of 50 rings. Usually you can purchase hog rings anywhere between 1-4 cents each. If you can't find any in your local area, go on-line. I picked up some from a fabric shop for 3 cents a piece. I got 200 of them and had 24 spares after I was done with both seats. You will probably use about 70-80 rings per seat. I suggest getting at least 200 rings, and stick with the stainless steel rings.



**Leather Cleaner & Conditioner** - You will need this to prime the leather for a bit of stretching. It would not be a gather-round-the-campfire kumbayah moment if you ripped the leather while installing it because it was dry. Remember, some of these leathers, depending on where you got them, are

20+ years old, so they are bound to be dry and not very pliable.

For those of you who don't know, there is a significant difference between leather cleaner and leather conditioner. They are NOT always the same thing! You can't Pert Plus this stuff guys! Wash-and-go is a big no-no! Do what you will with your hair, but spend some time cleaning your new leathers, and THEN apply, liberally, a good conditioner to your leathers at least 24 hours BEFORE you install them. This will give them time to absorb the conditioner. Another tip, when you clean and condition your new cows, do it at room temperature (72° F or higher) to allow the pores to open up. I recommend Griot's interior cleaner followed up with Griot's leather care and/or rejuvenator. ([www.GriotsGarage.com](http://www.GriotsGarage.com))

### **Needed Tools:**

1. Regular Pliers or Vise Grips
2. Needle-Nose Pliers
3. Hog-Ring Pliers (can use regular pliers)
4. Phillips Screwdrivers
5. 7mm Allen wrench
6. 10mm Socket with Ratchet
7. Punch (or something to poke a small hole in fabric)
8. Razor blade or sharp knife
9. Zip ties
10. Washers
11. Vacuum Cleaner (oh yes... you will need this!)

### **Removal From Car:**

The seat is secured to the fiberglass under body with four 10mm nuts. But before you remove the nuts, pull up the adjustment bar on the seat, and scoot it all the way forward. This will allow you to easily remove the seat from the car. Rotate the recline adjustment knob until the headrest is all the way forward. Remove the four nuts which are located underneath the car. Proceed to carefully remove the car seat from the car.



Find a clean place to set the seat down on its back. Grab that 7mm Allen wrench. The adjustment rack on the bottom of the seat is held on by four bolts. You will need to move the slide rails to get to all four bolts.



### **Pre-Removal Prep Work:**

Once you have the adjustment rack off of the seat, flip the seat right side up and trade the Allen wrench for a Phillips screwdriver. Remove the two screws from the bottom of the back cover of the seat. To remove the back cover, pull down on it and give it a good wiggle. It should come loose, and you can easily pull it out.

Take a moment to get a good look at all the hog rings. Note the placement and how the leather is pulled around the frame from the top, sides, and



bottom. Since it will be hard for me to describe in print exactly how to wrap the covers around the frame, it will be important for you to see how it should be done. Don't worry about exact placement; I just want you to get an idea about how it should look.

To proceed, you will need a set of regular pliers and a pair of needle-nose pliers. Grab the hog ring with the pliers, clamp down and twist the hog ring off. If you don't have the Kung-Fu grip required to twist off the hog rings, use vise-grip pliers.



Don't go tearing into the seat just yet, there are a few more things you need to be aware of.

Look at the bottom of the seat... see those black plastic circles? No those aren't mold spots, those hold down a metal bar that is attached to the leather slip which hold the inside creases and curves of the leather taut with the foam cushion. We need to get those black plastic rings removed before digging into the hog rings. Take the pliers and grab the plastic tip that is in the center of the plastic ring. Push down to pop it out.



Get a small Phillips and pry up the plastic seat tilt lever on the side of the seat. Careful! Don't break that bugger.



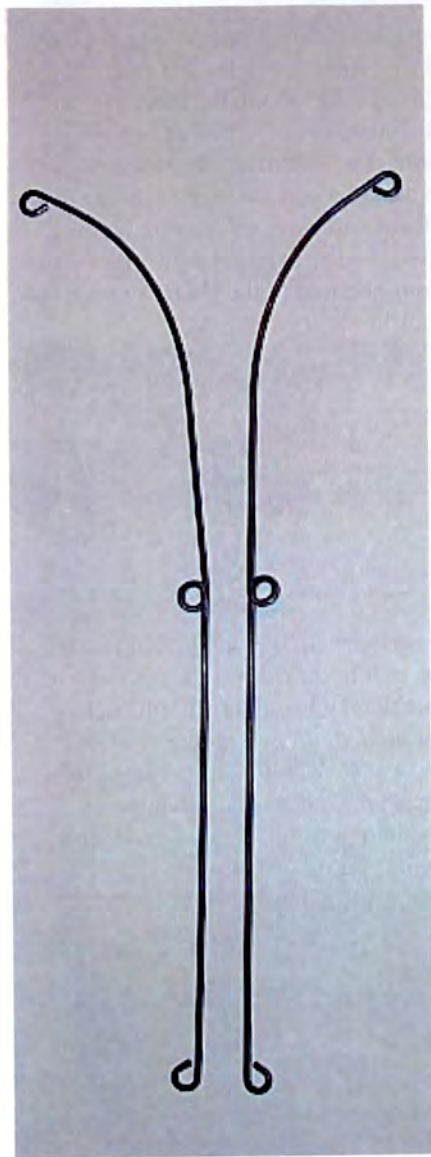
Then unscrew the plastic plate underneath the lever and remove it as well. Place these items in an area where you won't step on them as they are highly breakable.

### **Slip Cover Removal:**

The hog rings may taunt you no longer... go ahead and dig into them starting with the bottom slip cover. Your first couple of attempts at removing those hog rings will try your patience, but keep at it and you will develop a rhythm.

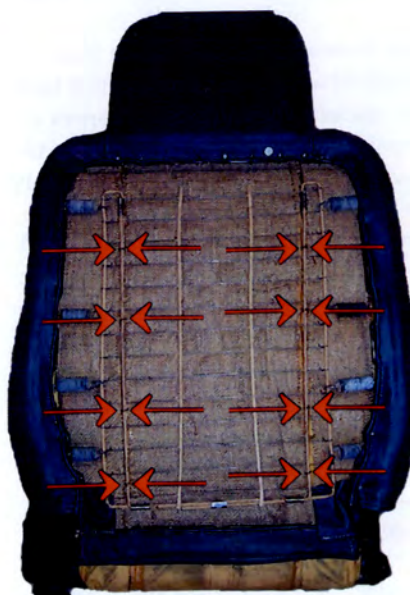


Once you are finished with the bottom cover, go ahead and carefully remove the bottom slip cover by first untucking the ends of the leather from the back and sides. Then pull the cover forward. Don't forget to remove the two metal ribs from the slip before you toss it! You are going to need these later.



The top portion of the seat is a little more complicated than the bottom. If you look closely on the back of the seat, you will see some hog rings that are in the inside portion of the seat and not on the edge like the other rings. These rings are fastened to a metal bar inside the leather slip to pull the inside crease taut with the foam seat. These are not too hard to remove. Like the previous hog rings,

twist them off.



Uh oh! Here it is... the real pain-in-the-ass part of the project. Thank God I am already finished with my seats, so rest easy knowing that I will not suffer through this with you.

Just below the headrest, you should notice two creases. Are you seeing the pattern here? Every time there is a crease, chances are there is a little metal rib that sits inside the slip cover, and there are usually hog rings holding it to the frame, with the exception of the bottom slip. If you lift up the foam on the back of the headrest, you will see some quarter size holes in the metal. Just big



enough for you to reach in with the needle-nose pliers and pull out those hog rings. (Just a note: it's easier to just pull those rings straight out rather than twisting them out. Oh yes... the pain train has reached the station!)

It may be a bit easier to remove the rings in the headrest crease from the front by completely removing all hog rings from the lower portion of the slip cover, then pulling the slip up over the headrest exposing the bottom of the first crease. Now you have the hog rings front and center for removal. You will need to do one crease at a time. In case it's not easier to get to



the hog rings from the front, you will have to get at them from the back through the holes.

If you care about the old cow skins, carefully remove the headrest portion of the skin by pushing down on the foam while pulling the skin up and over the headrest as if you were going to turn it inside out. If you don't care about the old cow skins, well I don't need to tell you how to remove it... go crazy! Just don't rip or cut the foam during your tirade.

Take a step back, and look at the now naked seat. Chances are it is as dirty as mine was. This is where the vacuum cleaner comes in handy. I had to use a 5 hp Wet Vac to suck out all the black rotted foam particles which seem to emanate from the old skins, and was permeated into the seat foam. So have fun with that, and just don't leave it—seriously... that's gross.

### Commercial Break?

Another improvement you might want to consider, since you have your seats

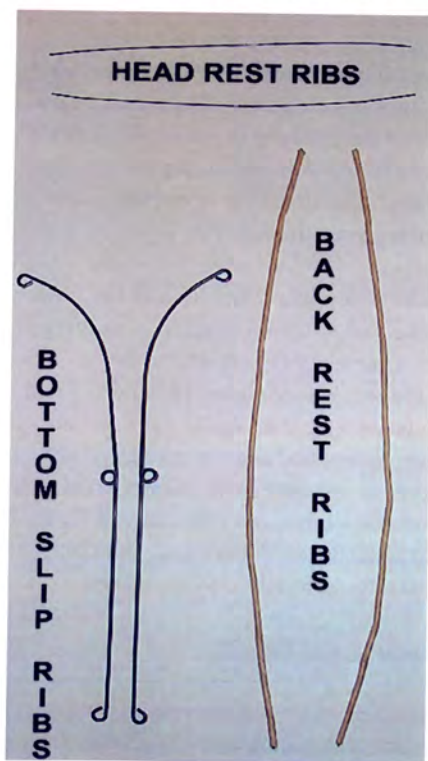


completely disassembled, is heated seats. And I'm not talking about the 50¢ burrito-heated seat either. You can easily install heated seats into your D, but I should leave that for another article. Okay wait, hell no, I am not going to take those seats apart again. (Sorry Ron!!) So here is a quick run down. Go to [www.heaterseats.com](http://www.heaterseats.com), and get their \$80 heated seat package. You will be able to cut the heater pad to fit the DeLorean seat. Then give Houston a call and get two of their blank rear defrost switches, one for the driver seat and the other for the passenger seat. Install the switches where the plastic blanks are next to your window switches. Viola! Heated seats baby!

(DMC Houston and Heaterseats.com, please send endorsement check by Friday.)

### **Pre-Installation Prep Work:**

Getting back to the subject at hand, you should have collected six bars/ribs from the old top and bottom skins. Take a good look at them and make sure they are in good order. A few of them may have been bent through our skin removal procedure. Compare yours to a picture of mine. (below) If

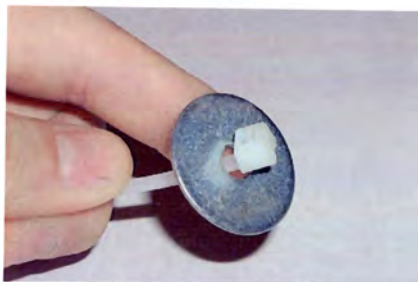


you need to, straighten out the ribs, and then insert them into the new skins.

The bottom seat used, as you may recall, black plastic fasteners that hold the seams taut to the foam. I spent a considerable amount of time trying to track down those black fasteners, only to be told that they were possibly a unique item that will be hard to find. I was about to call Houston when it hit me, those plastic fasteners didn't seem to do that great of a job. They weren't even tight and had a lot of play between the seat cushion and the skin. I wasn't impressed, so I ended up replacing those plastic fasteners with stainless steel washers and zip ties. That's right! Zip ties! I know this hack may disqualify you as a "proper vendor", however, there are some benefits to ditching the old plastic fasteners. First, you can get zip ties and stainless steel washers just about anywhere, you can choose how tight you want the fit by adjusting the zip tie, it's easier to install, and lastly, it's a heck of a lot cheaper. Besides, no one is going to see your handy work since it will be under the seat, and you would make MacGyver proud!

### **Installation:**

Pick up some 20 mm wide washers with an 8 mm hole. Also, get 4" long zip ties. These may seem too long, and they are, but the length makes them easier to install. Install the metal ribs into the bottom slip cover, and pull the cover over the seat cushion. Take a washer, run the flat end of the zip tie through the washer. The head of the zip tie should not pass through the hole of the washer.



There are holes where the old plastic fasteners were, stick the flat end of the zip tie up through that hole.



Roll the side of the slip over, and you should see the zip tie poking through the cushion. Take the flat end, put it through the loop in the metal rib, and then fish it back down through the hole. Pull it through the hole and put it back through the hole in the washer. (Please note that the picture below gives you an external view of what the configuration of the zip tie should look like.)



Fasten the zip tie together, but just enough to lock the ends together so that the flat end doesn't pull back through, don't pull all the slack out just yet. You will need the slack to install the other zip ties, and have room to move the slip cover around while you are installing it.



Once all the zip ties are in, tuck the back part of the skin underneath the back rest, and pull it through from the back. At the end of the skins you should notice that the vinyl portion of the skin wraps around a cord at the very end. These cords are what the hog rings wrap around to hold the skin to the frame. Similarly, you should notice that the frame has small bars that the hog rings wrap around to hold





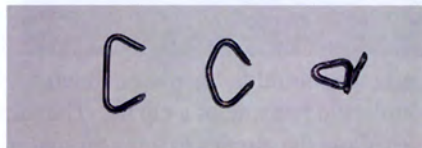
the skin to the frame. Pull the skin cord up to the metal frame bars all around the cushion to get it stretched a bit and ready for hog rings.

Fastening hog rings to the frame and skin is about as tricky as removing them. It will take you a couple of times to get the hang of it, but once you do, you should be able to develop a rhythm. Hog rings tend to vary a bit, but the installation is pretty much the same. Hog ring pliers are a completely different story. There are all sorts of hog ring pliers in different shapes, angles, etc.



I found plenty of hog ring pliers for around \$10, but really, unless you are going to be doing a lot of upholstery work in the future, I suggest that you use a regular pair of pliers. You can even put a notch on each jaw of the

pliers to help hold the hog rings if you really want to, but I didn't find it necessary. You have a few extra hog rings, so go ahead and practice on a few. The photos below show the different stages of crimping a hog ring.

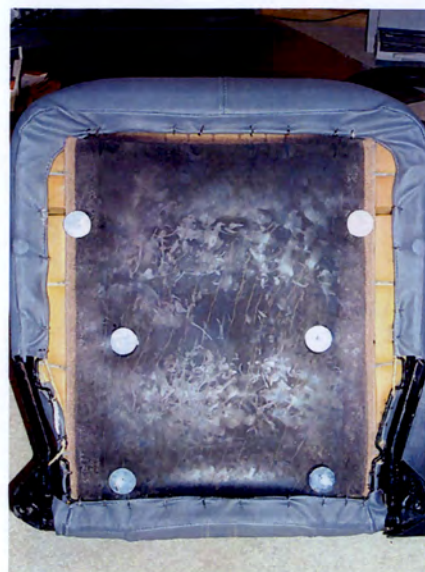


Start with the front of the cushion by putting one hog ring smack dab in the middle. Pull the edge of the skin with the cord in it up to the metal bar on the frame, and hold it with one hand, then with the other hand, clamp the hog ring around the metal frame bar and skin cord. It should look something like this:

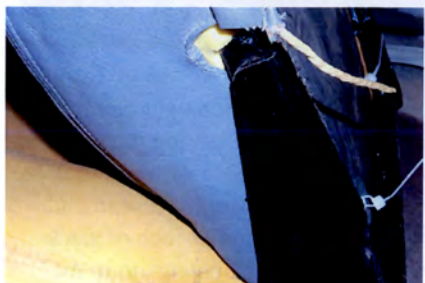


Try this again on the right and left corners.

Work your way around installing the hog rings with your spacing at least an inch apart. As you work your way around, check to make sure that everything is straight and you are not pulling too much to one side. One good way to do this is to switch side to side after every couple of hog rings installed.



As you get towards the back, you will notice two small vinyl flaps on either side. These slip between the metal frame and cushion.

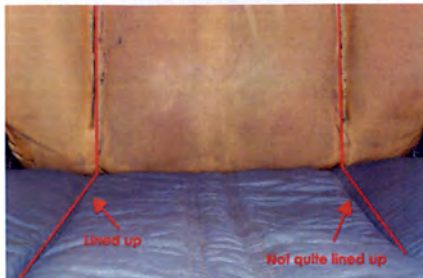


You will need to use needle-nose pliers to carefully pull it between the metal and cushion from the bottom of the seat.





Once you are finished, and everything looks lined up and straight (see example below), pull out the slack in



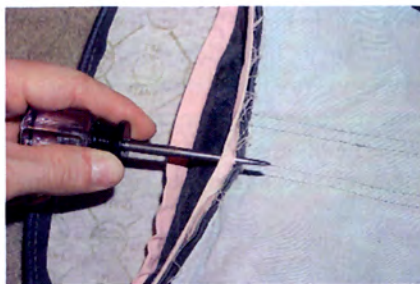
the zip ties starting with the two top ties, and working your way down.



I was able to pull mine tight enough to have the rib hoop touching the metal washer. You probably won't need it that tight, in fact I would recommend that you leave a quarter inch of slack in case the leather tightens up in the future. Cut off the slack pulled through on the zip tie, and you will have a nice finish.

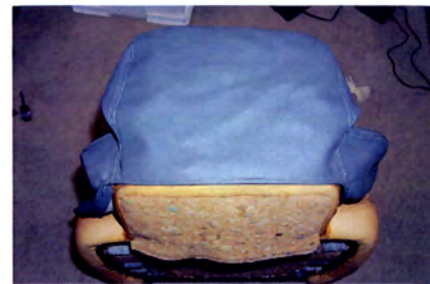
#### **Back Rest Portion:**

First thing to do is slip the remaining four ribs from the old skin in to the new skin. After you insert the two small ribs into the area just below the headrest, you will need to poke six holes, using a punch or whatever else you have, in the fabric sleeve holding the rib, just above each rib.



The holes should be just big enough to insert the flat side of a zip tie. The holes allow the zip ties to wrap around the rib that is inside the rib sleeve, and wrap around the metal frame of the seat, thus holding the slip firm to the frame. If you recall, from removing the slip cover, these ribs were held to the frame with hog rings. If you thought you had problems getting the hog rings on earlier, imagine trying to hog ring these ribs to the frame! Zip ties do the job just as good as the hog rings and are much easier to install. Of course you don't have to use the zip ties and can go with the hog rings. Roll the fuzzy dice and see where it takes you. Us zip-tie guys will be out enjoying our cars while you are still fussing with the hog rings.

Now we come to the headrest. Yeah, I know this looks like it's going to be tough, but really it should only take you about 10 seconds. We have two tricks at our disposal to get that headrest tackled... you can spray the foam with silicone, or use some leather conditioner to slick that sucker down. I used a quick spray of silicone (don't use a lot) all around the headrest, angled the top front of the foam headrest into the slip cover, and pulled the cover over.

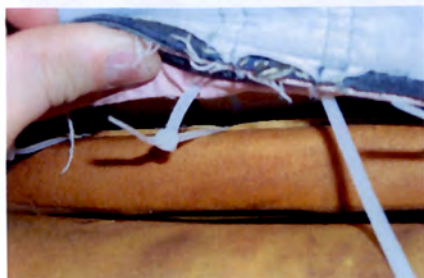


I bet you thought that would be the hardest part right? Well lucky for you... the hardest part, in my opinion, has already come and gone. Well... that is, unless you have another seat to do. With the slip cover over the headrest, flip the bottom part of the





cover up over the headrest to expose the small ribs where you poked the holes for your zip ties. Starting with the top rib, insert your zip ties with the tie head facing up. If you look at the foam portion of the seat, you will see where the foam splits twice under the headrest.



Inside those splits are the metal bars which you pulled the hog rings off of. You will want to slip the flat end of the zip tie over the top of the top metal bar, and using needle-nose pliers, go under the metal bar and grab the end of the zip tie to pull it around.



(Please note that the picture you see here shows me installing the zip tie on the bottom metal bar. Make sure that

you keep the top rib with the top metal bar and so on.)

Once you pull the zip tie through, go ahead and insert the flat end of the zip tie into the zip tie head, but don't pull out the slack just yet Mr. Eager Beaver... we need to get ALL of the zip ties looped around the metal bar first. Once you have all the zip ties looped around and connected, pull out the slack and then cut off the tails.



Now get to work on the bottom one using the exact same steps.



Doesn't that look special?



We are at the final stretch, and I can't wait to get this article done so I can go have dinner, and so Ron can be happy with me for submitting an article two weeks late instead of my typical three weeks! (Ron, does that mean I am technically early this time?)

Let's see... how did I do this? Oh yes! Pull the cover down over the seat, and tuck the bottom of the slip between the backrest and buttrest. You should

notice a small flap sticking out.



This tucks back on the side between the metal frame and the cushion.



When you pull it through to the other end, go ahead and leave it and we will hog ring that piece later. There is another flap on the other side, tuck it between the frame and cushion as well.





Those long metal ribs are in the slip cover, right? Okay, just want to make sure before we continue... glad you have been paying attention.

Start with the top of the slip cover; make sure it's pulled down taut. Using your master upholsterer hog ring clamping techniques developed from putting on the bottom seat cover, clip the first hog ring. Put four hog rings just under the headrest portion and then work your way around.



Make sure as you work your way around the slip cover, you check to make sure everything is even in the front and there are no wrinkles. Also make sure that the crease lines match up with the bottom seat cover. It's good practice to work from side to side, so in other words, clamp on two hog rings on the left, then two on the right and so on. Don't worry about the seat retract lever just yet—go ahead and pull the cover over it, and leave it for now.



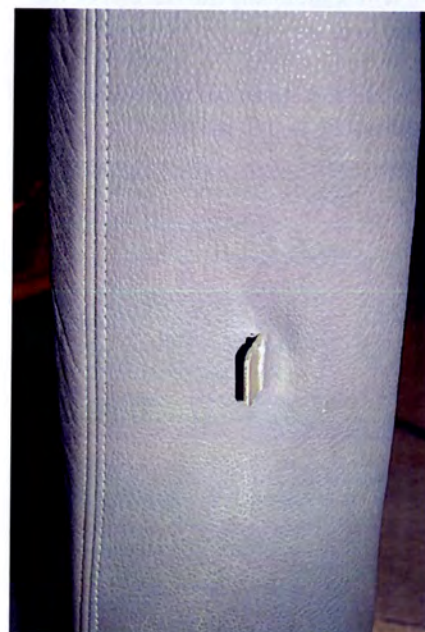
Remember those small flaps we tucked between the frame and cushion earlier?

Just before you hog ring the bottom portion of the sides of the slip cover, put that small flap of vinyl underneath it and hog ring them to the frame together.



Grab some pliers. You have to pull the bottom part of the backrest cover up to the metal frame bar. The cover should be pretty tight over the seat by now and this can get a little tough. You may need someone to help you with this, but if you are coordinated (and I know you are!) you should be able to, with hog ring prepped in pliers in one hand, and pulling up the cover to metal bar with pliers in the other hand, hog ring the bottom of the slip cover cord to the metal frame bar smack dab in the center. If this doesn't work, and you don't have anyone to hold the slip cover up for you, use the pliers to pull up on the slip cover (Gently! Don't rip it!), stretch it over the metal bar, hold it with your finger while you grab a hog ring with the pliers, and then hog ring the cover to the metal bar. Once you have one ring in, quickly get a couple more going before the tension does some damage to that one ring. Then work your way from the center out, installing from side to side until it's complete. Your spacing should be about an inch or two apart.

Now we can go back to the seat retract lever. Take a razor blade or sharp knife and cut along the front of the indent of the lever. Don't make the cut longer than the lever indent.



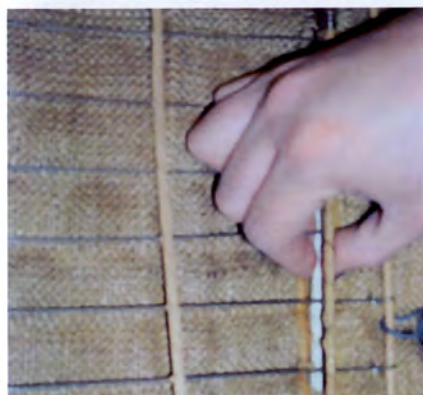
That's all for the lever for now, and we can go back to ignoring it again.

You might need someone to help you with this next portion of our adventure. If you look at the back of the seat, you will notice there are vertical slits in the foam cushion just to the left and right of center. You should also notice a metal mesh stretched across the back of the seat held on by springs. I call this the BBQ grill. The ribs in the slip cover come through those slits and are hog ringed onto the paper wrapped bar of the BBQ grill. You can probably zip tie these ribs to the BBQ grill (that would require you to have poked holes



into the fabric sleeves that the ribs are in, like with the headrest.) Hope you read through the entirety of this article first, but I found that it wasn't that hard to just hog ring them to the BBQ grill.

Pushing that rib through the slit with one hand, and hog-ring prepped pliers in the other hand, hog ring the center of the rib to the BBQ grill **FIRST!**



I hog ringed every other square outlined by the BBQ grill.



Move over to the other rib and do the same thing. This rib will be a little harder to push in than the last... obviously the first rib pulled out some of the slack.

Back to the seat retract lever—this is going to sound weird, but stay with me. Take the plastic frame that goes around the lever, and reinstall it. Once it's on, take your razor and cut out the vinyl on the **INSIDE** of the plastic frame. See! Perfect fit! Put the plastic lever arm back on, and you are done.

Now that you are done with the reupholstering portion of the job, sit back and take a good look at your work. Looks good doesn't it? Let's finish this up.

Flip the seat on its back, and poke some holes into where the top bolts go for the adjustment rack. Flip the seat upright again. The back panel tends to be more of a pain to reinstall than it was to simply rip off. Start with the top bracket, and position it just below where the slip cover is hog ringed to the metal frame. With the back cover pushed into the back of the seat, push the top 'L' bracket up underneath the metal frame. It may take a wiggle or two to get it all the way up. Once you have it up, bend the back panel a bit to wedge the side 'L' brackets underneath the metal frame on the sides. Once the back panel is firmly attached, take the small screws that fasten the bottom portion of the back panel to the frame, and insert the screws into their respective holes. You will have to feel around until you find the hole in the frame for the screw. Tighten the screw down on both sides.

Flip the seat on its back one more time, and reinstall the adjustment frame using the reverse removal instructions.

Reinstalling the seat into the car can be a challenge. Just keep the seat folded, and have the slides all the way back (seat forward position) and angle it back into your car. The seat belt arm always gets in the way, that's to be expected. That's why you want the seat forward. Secure the seat with the washers and 10 mm nuts. Don't tighten the nuts too hard, otherwise you will snap the bolt off. It's not hard to replace the bolt, but don't give yourself more work than you need.

You are going to need some time to recover from this project.

I was so anxious to get my seats back into my car that I forgot to take a picture of the finished product for you. So here is a picture of the finished product, inside the car. Oh—look so good! Those sheep ain't got nothing on these cows!



Some final thoughts... the skins may seem loose on your seat—don't worry, that's normal! Over time as the seats are exposed to the sun, oils from your skin, cleanings, etc., they will tighten up. That's why, as I mentioned earlier, you may want to leave some slack with the zip ties on the bottom slip cover.

Well, you did it! You saved yourself a good pile of money... money better spent on DeLorean parts and subscriptions to **GULLWING Magazine**. Was it worth it? Of course it was! Good job!

Of course, as always, if you have any questions, suggestions on how to do this better, hate mail, or want to let me know how this worked out for you, please feel free to shoot me or Ron and Cheryl an e-mail anytime.

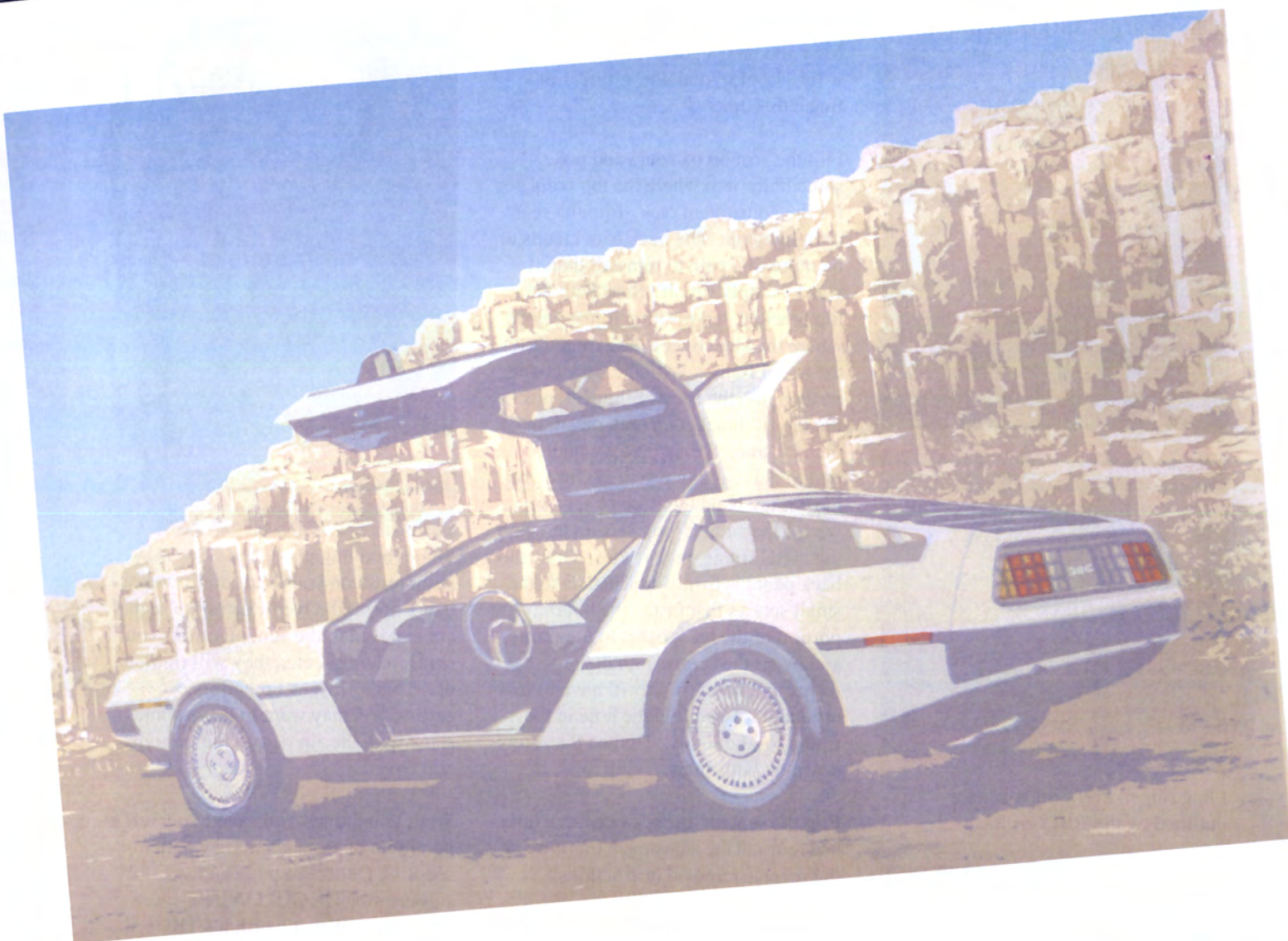
It's time for me to go eat... until next time!





If you missed it at Eurofest 2001... don't worry.

If you didn't win it at the Houston Concours 2003... don't worry.



This Special Edition ORIGINAL SCREEN-PRINT is now available for a limited time. Since only 40 of these prints exist, quantities are limited. Each print is numbered and signed by the artist Debra Wenlock. The print area itself measures 8 X 11.5 inches with the overall canvas size measuring 12.5 X 18 inches. Add this unique piece of artwork to your DeLorean collection today! To order, send check or money order for \$150.00 to Gullwing Magazine, P.O. Box 991, St. Peters, MO 63376 or transfer funds via [www.PayPal.com](http://www.PayPal.com) to [gullwingmagazine@juno.com](mailto:gullwingmagazine@juno.com). Price includes shipping and insurance.



# 2005 DELOREAN CALENDAR



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years had taken their toll and the calipers frozen. The entire braking system was scavenged from the rollover car, including the wheel lines, calipers, rotors, and master cylinder. (They were all carefully inspected to make sure that they hadn't caused the accident!) It also turned out that one of the rear wheel bearings had failed, and it was easier to swap the entire hub carrier than to change the bearing.

The same thing was done with the fuel system – it was very handy having a mechanically perfect donor car, and undoubtedly saved the owner a small fortune in parts. Even with that, the project took about \$1000 in new parts; those items that either could not be scavenged off the rollover car such as the radiator, hood and trunk struts, and a few interior trim parts. The A-pillar

covers had been damaged in the fire, and the ones from the rollover car were crushed. There were also some normal replacement parts where it is false economy to install used parts – such as the fuel pump rubber parts, clutch, and clutch hydraulics, door seals, and headliners. The headliner from the rollover car was actually in pretty nice shape other than a few minor cuts and blood stains. Some parts were used from the rollover car just because it was easier, for example the original gas tank could have been salvaged, but why spend a day cleaning up all that tar when the whole clean tank can be swapped in an hour?

An interesting observation was made about the fire-damaged car. After almost 20 years, there was absolutely no perceptible smoke

odor left in the carpeting or seats.

Probably the most annoying discovery was that the clutch pedal was frozen. Unfortunately, in addition to stuck master and slave cylinders, the throwout bearing was stuck to the transmission shaft. So – out came the transmission, in went a new clutch, throwout bearing, all the hydraulics, and as one of those “while you’re in there” things, a rear main seal and gasket. The axles from the donor car were used upon reassembly since they appeared to be in better shape. One of the transmission axle seals showed signs of extreme leakage, so both seals were replaced and the flanges were sleeved to guarantee a leak-free job.

# CRASH & BURN

Story and Photos By: Rich Weissensel and Dave Swingle

[You may remember from the last issue of Gullwing Magazine, this is the story of a car that was brought back to life last winter by using parts from a crashed car to restore a car that had been burned in about 1985]

Duane made two trips from Iowa to Crystal Lake, IL in December. Christmas Eve 2003, he dropped off what was called the “rollover” car so that it could be completely dismantled. The restoration would require most of the interior and much of the running gear from the rollover car. Due to space limitations, it was most efficient to completely strip it bare and haul the non-reusable parts (the tub, frame and stainless) away. Dave, Rich, and Dave's son Gary spent the long Christmas weekend taking

apart the rollover car. This was probably the saddest part of the project, as the rollover car was obviously in pristine shape prior to its demise. The frame shined like new, and not one screw was broken during disassembly. All the cadmium-plated parts under the car were still the original gold color.

The team had the garage cleared out by the next weekend when Duane delivered the Project Car. The first day or two were spent on a detailed inspection and project plan. In addition to the obvious reassembly of the interior of the car, the car needed all the refurbishments normally associated with a car that has not been run in over 10 years, and a few more. This meant anything with fluid in it (brakes, cooling

system, clutch hydraulics) and many of the other seals that hold fluids in place. Duane was insistent that the original engine be retained rather than swapping in the somewhat fresher engine from the rollover car. This turned out to be a good idea, although most of the fuel injection system from the rollover car had to be transplanted. Cleaning and “restoration” was not a major part of the project since Duane was mostly interested in getting the car running and mechanically sound. Once it was back in Iowa, he could clean it up and keep it going from there. As the owner of a large wrecking yard, he was not a typical hands-off owner.

The first order of business was brakes – there weren't any. The

*Two  
Bad  
Things  
Make One Good Thing*







As for the engine, it was decided to remove and replace the valve cover gaskets, mostly for an internal inspection looking for corrosion (none found), and to take the opportunity to pour oil on the cams in the interest of minimizing wear due to the dry start. Before starting the engine, the fuel injection system was tested by setting the injectors in small jars, activating the fuel pump, and seeing what came out. It was quickly discovered that the fuel distributor was frozen, so the fuel distributor in addition to the fuel pressure regulator, frequency valve, and three of the injectors was lifted off the

donor car's engine. With this – it fired right up on the first try! After some other cleaning and the customary replacement of the air conditioner idler bearings, the engine was declared complete. The team warned the owner that the water pump would likely fail in the near term, but for the time being it was left as a future project. The radiator was replaced since the original one was showing signs of seepage. Duane was also cautioned to keep an eye on the hoses since they remained original. The only other part of the cooling system replaced was the tiny "tee" connection behind the fuel

distributor. It was clogged with crystallized coolant and showed signs of severe corrosion.

The interior was a straightforward job of assembly, although there were a few moments of head scratching as none of the team had seen a dashboard quite this far apart before. It was handy to have Dave's "whole" DeLorean in the next bay as a reference. Since the owner is "over 60" the stock stereo was reinstalled with new old-stock speakers. After the installation of new A-Pillar covers, Ken Koncelik visited and installed the new windshield, which had been





purchased by owner Duane sometime in the 1980s. Ken also demonstrated how to seal up the roof panels to avoid any future water leaks.

The final part of the job was working out some of the minor details. Wiring was shorted out in the passenger door, so it was opened up, the dead mice were removed, and the wiring fixed. Both windows were adjusted, along with the door torsion bars. The door locks were changed to match up with the new steering column's lock.

Then it was time for the test drive.

This was yet another enlightening experience for the team. This car still had all the original suspension components including springs, shocks, and of course the original Goodyear NCT tires which had been on the car sitting in one position for almost 20 years. Talk about square tires! In the interest of a real test drive, Dave had to borrow another set of tires (from the Pigeon Forge Raffle Car which had shown up by this time) just to see how it really drove. The NCTs were that scary-bearing a very close resemblance to driving the car with all the lug nuts loose. The only part of the project left

undone was a recharge of the air conditioning system. As the Poell's have the equipment for that due to the nature of their business, that was something that could be taken care of later.

The whole project took almost three months, working most weekends and a few weeknights. Duane returned at the end of March and towed the car back to Iowa, where he promised to drive it more often!







# Our Readers Write!

## LETTERS TO THE EDITOR



e-mail to [gullwingmagazine@juno.com](mailto:gullwingmagazine@juno.com)

Posts  
on DML  
& DMCF



Without trying to pat ourselves on the back (like we did last year), we thought you might enjoy reading some of the many comments we've received about the Calendar, and the Magazine during the second full year of GULLWING Magazine's publications. We really do appreciate it when you take the time to write to us, so don't be shy to tell us what you think. Your kind words of enthusiasm means so much, and it helps to keep us motivated to continue to do the best that we can do. **Thank you for writing!**

### 01/21/04 Re: Subscription Referral

"Just finishing an extensive restoration (stainless everything, turbo, minimum appearance mods) with DeLorean Motor Center. Don Steger recommended your magazine - I've been with [another] since it started, and I hear that your work is a better read. Incidentally, Don and Danny told me you folks are interested in doing articles about projects like these. Let me know if I can be of help. Look forward to hearing from you."



### 01/23/04 Re: Gullwing Magazine!

"I must begin by saying that your magazine is FANTASTIC! I love it and I hunger for it!"



### 01/25/04 Re: Thanks

"Hi Ron & Cheryl, I have been reading up on a pending brake job on my DeLorean and have enjoyed the articles in the Summer '03 issue written by David Jacobs entitled 'Give Me a Brake'."



### 01/27/04 Re: Gullwing Magazine

"Thanks again for all that you are endeavoring to do for us. Looking forward to Pigeon Forge!"



### 01/30/04 Re: Believe it or ?

"If any guy complains about that picture, something is wrong with them, and they need to be slapped upside the head."



### 01/30/04 Re: Article finished

"Naughty, naughty, Ron! Don't you know you can't have your cake and eat it too?"



### 02/08/04

"Ron - I hope that all is well with you and Cheryl... I'm looking forward to the next issue of Gullwing. I trust that you got my check for the renewal? Take care, and keep in touch."



### 02/12/04 Re: Subscription

"Writing—know what you mean. Just read the back issues of [another]. Good mag with interesting material and all, but Hemingways we ain't. Wouldn't mind doing more features for Gullwing if you're interested. Might be able to do a bit more in depth on things like suspension set-up with Rob Grady or the stainless frame with Reg and Bryan. Dan Botkin has a project in the works that we've agreed to work together on. Or perhaps a technical dissertation on the Swedish Bikini Team...Look forward to reading GW."



### 02/14/04 Re: Thank you for your message

"Thank you again for your last message, I can't wait to see the next issue of Gullwing magazine, I saw on the DML the next issue will be soon available."



### 02/15/04 Re: 1 yr Magazine Renewal

"Hello Ron/Cheryl, thanks for putting out a quality magazine. Here is my renewal for an additional year. Keep up the good work!"



### 02/16/04 Re: Great DeLorean Magazine

"Dear Editor and Publisher:

We received our first issue of Gullwing Magazine. What a truly fresh perspective magazine, especially your coverage of the SEDOC "Cruise In." Having helped plan and organize the event, to read your description and the participants comment was most appreciated. We became captivated by the DeLorean from the beginning. Refurbishing this fine machine has been our hobby and pleasure for the past twelve years. We have two renewals in process and two waiting. Our thanks and appreciation to you both for Gullwing's added dimension. Send us six copies for friends."



### 02/17/04 Re: Article

"Ron,

I just got done reading the article and I think you did a fabulous job putting all those emails and pictures together. You certainly have the knack for this. I also enjoyed Toby Peterson's article on the new parts business. The seagull "MINE" cartoon is a kick for anyone who's seen Finding Nemo....:) Kudos on the Dick Ryan article. He's a great guy and a terrific member of the community, much as you are!"



### 02/18/04 Re: Article

"...I have gotten a couple of phone calls about 'the nice article'... Gotta see this.

...Okay, so I'm not humble, so what..."



### 02/18/04 Re: Submission

"...Glad to hear you got this last issue out the door, I was just about to offer to help proof read. I am not surprised that you are already getting good feedback... you guys put together a kick ass magazine. Can't wait to see it!..."

...I am wondering what the DeLorean community wants to know/see. Thoughts? I am wondering what the HOT topics are."



### 02/18/04 Re: Gullwing Magazine Renewal

Note on PayPal: "I've been meaning to renew my subscription and I'm always late with these things. But I don't want to miss a single issue!

Thanks for a great magazine!"





**02/18/04 Re: Article**

"...We just got the magazine in the mail ... awesome. It gets better with every issue. The wheel articles were great."



**02/20/04 Re: (no subject)**

"Dear Ron and Cheryl,  
We were so wonderfully impressed with your Vol. 1 Issue 4, and appreciated the excellent coverage of the "Cruise-In". However, we are saddened by the use of the photo in Vol. 2 Issue 1, on page 16. It would probably be best to cancel our subscription at this time. The photo does not seem consistent with the premium quality of Vol. 1 Issue 4. Hopefully we will see you both in June."



**02/21/04 Re: Rich and Fred**

"Just read about Rich Weissensel and the D-Rex. Got an e-mail address for him? I suspect his buddy and sometime DeLorean courier Fred Geerdink may be the same Fred Geerdink I went to high school with. I know it's a common name and all, but hey, it's the right state."

Research on the article has been rolling right along—talked to all kinds of people involved in this project, some of whom I haven't been in touch with for twenty five years. (From my DMC days.)

...Nice magazine. Great content, good looking, lots of fun to read. Hope to add to the literary mayhem here and there."



**02/22/04 Re: Advertising and Articles**

"I am one of your happy subscribers... I am interested in advertising my website... I would like to try to contribute to your magazine. I plan on writing some articles... I am sure everyone will like this."

Thanks again, and I love your magazine and read it cover to cover!"



**02/23/04 Re: Gullwing**

"Dear Larry Flint - Oops, I mean, Ron!!!

Her legs are MUCH better than [ ]'s legs. I've not seen [her] tush, but I suspect that it isn't nearly as nice either."

Actually, I was a bit disappointed. I was hoping for full frontal nudity. Oh, well, I guess I'll just have to keep surfing the web for my porn."



**02/23/04 Re: Gullwing**

"Sheesh, I didn't expect such a layout on the old fart. Very nice and it made my wife happy too. So, as I said, I'm not humble. What's the cost for two additional copies? (BTW, when I received Gullwing this morning I also got a SECOND NOTICE from you guys. Good timing! Thank Cheryl for the layout.)

I like the direction the mag is taking. When I got this second D, I was 64 years old and I thought I'd probably just keep it very stock (except for the turbos which I almost consider stock). Well, as you can see, I gave that up some time ago.

To date: lowered front end via Grady spings, lowered rear end via Marty's shocks, total sound system change, cold air intake (two of them actually - you'll love the cleanliness of the new system), chrome all over the inside of the engine compartment, rewiring the engine compartment, powder coating on the engine, etc., etc., chrome wheels, carbon fiber inserts and the list just keeps growing.

I don't understand the mentality that object so violently to this. It attracts young owners (like me)and, no doubt, will over time increase the value of the true stock concours cars."



**02/24/04 Re: Hot Magazine??**

"You didn't put an entire naked girl in the issue, so, I don't quite understand why some person gave you a negative comment. You can see that in any car magazine."



**02/24/04**

"Oh, I just read Cheryl's comments in the mag. What? Not her legs!!!! Photoshop!!!! I knew it was too good to be true!!



**02/24/04 Re: Magazine Renewal**

Note: "Please renew my subscription to Gullwing Magazine. Thanks."



**02/26/04**

"How could you have offended someone? No loss. :) I was still thinking 'Mine, mine mine mine....' :)"



**02/27/04 Re: The Magazine**

"Yesterday, we received the latest issue of the magazine, thank you very much."

So, I take a look at page 16, just to see what is wrong with this page. I think that kind of picture is funny. We (the subscribers) don't have to be angry about this... tell Ron he did a great job with Photoshop. I think it was funny for him too!!!

As usual you did a great job; keep up this fantastic magazine, without you the pleasure won't be the same. It's good to be on the sofa and reading a good magazine about our favourite car."



**02/29/04 Re: [DML] Wanna see your car in the 2004 DeLorean calendar?**

"Thanks for choosing the picture. I'm really excited how this will look in the calendar."

**03/02/04 Re: Calendar**

"Hi Ron/Cheryl,  
I was wondering what the calendar price is? Also I sent my renewal payment via Paypal. Is Vol. 2 Issue 1 available yet? Have you setup a product web site yet? Keep up the GOOD work. Thanks."



**02/24/04 Re: Gullwing Magazine (Current Issue)**

"List, Just read the latest copy of GW Magazine and without a doubt, it is getting much easier to customize your DeLorean with extremely helpful articles like "Wheels, Fancy Footwear". Wheels and tires are probably the easiest way to customize your DeLorean that can still be returned to stock quickly. It's great to see so many options all together in one place."

I really enjoy the attention to detail here, particularly the photo at the top of the wheel article, starting on page 16. The photo really gives you a great perspective viewing those beautiful body lines (and the DeLorean body lines too).

Ron and Cheryl, keep up the great work on the magazine. All your efforts are appreciated more with every issue. Thanks."



03/06/04 Re: All issues payment

Note: "Ron, Eager to see my car in print."



03/07/04

"Hi Ron & Cheryl,

Got the last magazine you out-did yourselves keep them coming."



03/12/04 Re: Magazine Renewal

"Hey Ron - did you get my renewal check? I heard the latest issues had been shipped but haven't seen it yet. Is this the issue with a story on Toby's parts purchase?..."



03/18/04 Re: Latest Issue

"Hi Cheryl,

As luck would have it, it arrived yesterday the 17th. Pretty much on par with your estimate.

I love the cover shot. I read it cover to cover last night. Very nice balance of articles...

Keep up the great work."



03/22/04 Re: Address Change

"Hi Ron and Cheryl,

We've moved and I don't want to miss the next issue of Gullwing. Our new address is...

Best Regards."



04/01/04 Re: Renewal

Note: "If I have missed an issue, please send it and adjust the expiration date accordingly. Thank you."



04/12/04

"Dear Mrs. Wester:

...please let me compliment you and Ron for your efforts on the Winter 2004 issue. I have bought the parts needed to build the "Auto Tranny Testor" and I'm looking forward to using it for my DeLo.

...I wish you both every success. I know firsthand the enormous number of hours that are consumed in publishing a magazine. I hope you have a loooong and interesting run."



04/15/04 Re: World of Wheels review

"Hehehe.... I like it a lot!"



04/16/04

"Thank you so much for all that you do for the DeLorean community, and all that you've done to help [us] get started."



04/19/04 Re: Subscription Renewal

"Ron and Cheryl... I was going through my father's email and came across this note from you. I know this is terribly impersonal, but I was not aware of all of the DeLorean friends my parents had.... anyway, my father passed away on Sunday, April 18th. If possible can you cancel his renewal to Gullwing Magazine.... I am not sure how much mail will be forwarded. If you have any questions, please feel free to contact me at any time. Thanks for your thoughts regarding my mother's passing too."



04/28/04 Re: April Issue

"Hi, I've been on vacation for 16 days and was wondering if the April issue of Gullwing Magazine was already out?? We did not have them waiting for us when we got home. Ha."



04/20/04 - 05/22/04

"Ron, We got the magazine today. Everything looks great! We really appreciate it. Thank you so much for the great work. Please let me know if I can do anything for you."



05/22/04 Re: Latest Gullwing

"Ron and Cheryl, I just finished reading the latest Gullwing and can only say it gets better with each issue. I particularly enjoyed Joe Kuchan's turbo article because I can equate with everything he went through. In my opinion you guys have no competition, you have the best DeLorean publication hands down! See you in PF."



05/23/04

"Yesterday, we received the latest issue of Gullwing Mag. As usual, it's great! ...it's always a pleasure for me, and, I hope for the other owners too."



05/25/04

"Hey I got the magazine. And in the words of the great Comic Book Guy on the Simpsons... Best Issue Ever!!"



06/10/04 Re: Magazine

"Hello Ron & Cheryl,

I have recently received the latest copy of the magazine and must say you have been doing a fine job.

...Keep up the good work."



06/14/04 Re: Hi

"Hi Ron & Cheryl,

Just wanted to thank you for the lovely article in the current issue of Gullwing..."



06/28/04 Re: DeLorean Calendar Picture

"Hi Mr and Mrs. Wester..."

I talked to you at Pigeon Forge about my DeLorean being in your calendar. I have just gotten back from my journey across North America. I am going to take some pictures of my car today and send them to you by email. I hope I made it on time. Thank you..."



07/01/04 Re: Gullwing Magazine Subscription

"Could you please check my subscription to Gullwing Magazine. I think I renewed it but am not sure. I don't want to miss any issues. Thanks for another great DeLorean resource!

(If my subscription has lapsed, please let me know if I have missed any issues and how I can purchase them when I renew. I want to keep my set complete.) Thanks."



07/14/04 Re: Magazine Subscription

"Dear Ron & Cheryl,

...Can you tell me if I'm fully paid for the rest of Volume 2's (or second year's) subscription? I want to be sure I don't miss any issues! Thanks."



07/15/04

"Dear Ron and Cheryl:

My fiance' is a DeLorean owner and enthusiast from Ireland. He borrowed a friends Gullwing Magazine and has been reading it non-stop, he loves it. His birthday is coming up, so I have decided to surprise him with a subscription. I would be very grateful if you could send the issues to him. If you have any query, please do not hesitate to call me... payment enclosed."



08/10/04 Re: Magazine Subscription

"Hi, I was wondering when the next issues will be coming out. Also, I want to be sure my subscriptions are are to date. Thanks for the great work."



08/10/04 Re: Calendar picture

"I can't wait to see the magazine and the calendar. Also how can I subscribe to Gullwing Magazine and get all of the back issues?"



09/09/04 Re: Ordering Gullwing

"I receive the magazine, and it helps me a lot. Thank you very much."





09/11/04 Re: Summer Issue Gullwing

"Did the Summer issue of Gullwing come out yet?  
...Hope we didn't miss it."



09/14/04 Re: Magazine Subscription

"I was just wanting to make sure I have the last issue out. Thanks, you have the best magazine I have seen for the DeLorean. Keep up the good work and I look forward to being a subscriber for many years to come."



09/16/04

"Hey, I got my GULLWING mag today and I love it, it looks fantastic!"



09/21/04 Re: Subscription

"...Appreciate your efforts."



09/21/04 Re: Wow!

"I just received my copy of the new issue. All I can say is Wow! You outdid yourselves this time. The cover and the centerfold are fantastic!"



09/22/04 Re: Magazine

"Got it! Superb, as usual! Have fun at AutoFest!"



09/22/04 Re: Magazine

"...We want to thank you so much for all the work you put into it. The magazine looks great."



10/04/04 Re: Gullwing Magazine Renewal

"Thanks for the great work! Look forward to receiving the [new] magazines!!"



10/07/04

"Hi,

I love the latest magazine, I'm so jealous of the upgrades people are doing!

Thanks!"



10/14/04

"It's already been a few days that we received the last issue of the magazine. Great!"



09/16/04 Re: Gullwing Magazine! Thanks Ron!

"I almost wet myself when I checked the mail and found a new issue of GULLWING Magazine waiting for me! Getting Ron's GULLWING and Ken's DSC are the highlights of the month. I read them front to back, cover to cover and love every second of it... being that I have only had my car a year I am still a noobie and a little wet behind the ears on these cars and my passion for the subject has yet to fade. Do you ever just wonder outside and take a gander at the car and take a deep breath and sigh..... 'awe, it's mine all mine'?"

This month's Gullwing had some great articles in them, and I just want to say that it is well done, the printing, the layout, everything. You can see that a lot of hard work goes into these, I do graphics all the time and I know how long it takes to put together even a single page like this, let alone a whole book of them!

I would just like to encourage more members to get a subscription to this magazine. Ron and Cheryl work really hard on it, have invested a lot of money and time into it and I think we all owe it to them to help them out. The tech articles, the resources and vendor links are all very helpful and heck, it looks good on the coffee table! Go to <http://www.gullwingmagazine.com> to order a subscription, and a few back issues too! Mr. and Mrs. Wester, GOOD JOB!"

09/17/04 Re: Gullwing Magazine! Thanks Ron!

"Well, it's almost 2am as I'm reading this thread and now I want to rush downtown to my post office box to see if my copy is there. Since I've had a few beers, I'll just wait til morning. :-)"

I agree that Ron & Cheryl do an excellent job with the magazine. They're even flexible on how you can pay for the subscription. Ron let me pay for my first subscription last year by paying part of his hotel bill for the London Ontario DMC meet. Can't get cooler than that, eh? lol!"

09/27/04 Re: Gullwing Magazine

"...Love the article on Fontana especially since my name was mentioned. And yes, it was hot! I'm not into repair so I just skimmed those articles but still interesting. Especially how the guy got parts from everyone... Stephen, Don, etc..

Liked the article & pictures of the Biltmore Estate since we've been there. Fun reading. Congratulations on your hard work. Keep it up."



09/17/04 Re: Gullwing Magazine! Thanks Ron!

"Will you be bringing copies of Gullwing magazine to sell in Evansville again this year?"



09/18/04 Re: Gullwing Magazine!

"Can't wait to see the new issue."



09/27/04 Re: Gullwing

"Gullwing got some very nice 'press' from some DMLers, and your quick follow-up to that describing/promoting the mag was good marketing. Did you see a blip in new subscriptions as a result?"



11/26/04 Re: Gullwing Magazine Renewal

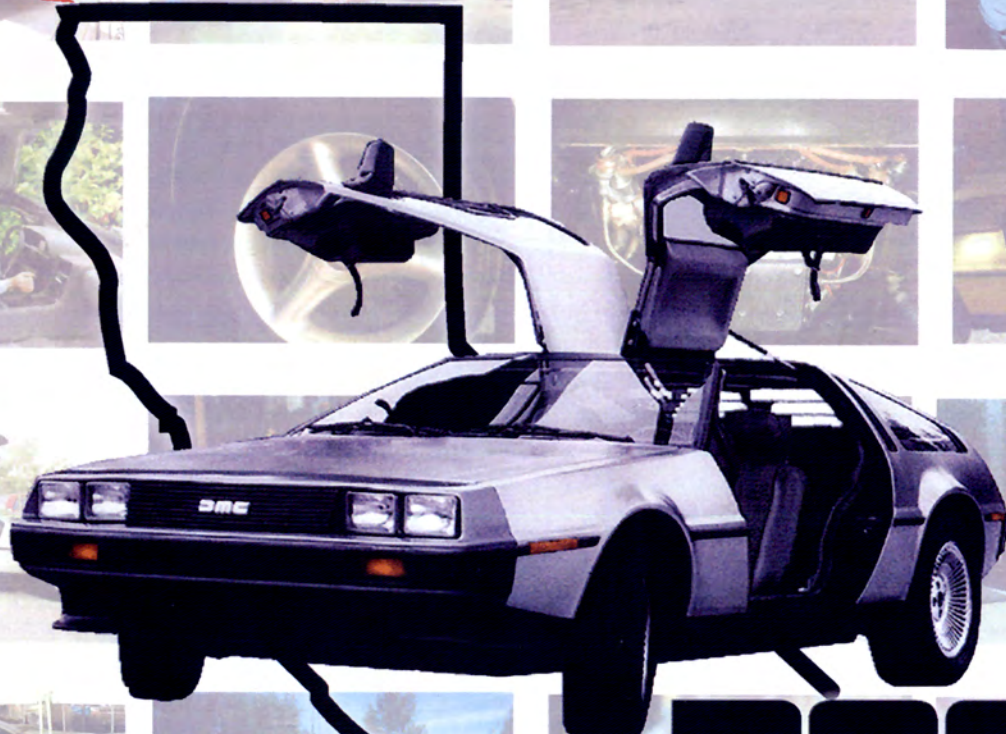
"My best regards to you and — again - thanks for a fantastic magazine!"





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